May/June 1991 $2.00

MONTANA OUTDOORS

OUR POINT OF VIEW

In 1991, an estimated 300,000 anglers will test Montana's waters—each one looking for that unique experience that comes only with fishing. Some will seek the solitude of a mountain lake or stream, while others will look forward to an outing with family or friends. Surveys of anglers have shown they have widely varying expectations from their fishing experiences, but nearly all of them take their sport very seriously.

In 1987, the Montana Department of Fish, Wildlife & Parks initiated a new phase of fisheries management planning that offers the angling public an opportunity to have a more direct input into factors affecting their sport. Ten priority waters were initially selected for development of five-year fisheries management plans. These plans begin with public meetings where interested sportsmen and women meet with department representatives to share common interests and concerns. At the same time, various management strategies are considered and explained.

From these initial meetings, the five-year plans are shaped, with an attempt to meet the biological, social, and economic realities characteristic of the given water body.

Since 1987, the department has completed plans on the Upper Bighorn River, Flathead Lake, Big Hole River, Stillwater River, Hauser Reservoir, Missouri River (Holter to Cascade), Rock Creek (near Missoula), and plans are in progress on several others. The planning efforts have been successful, and we have found that anglers appreciate the opportunity to be involved from the first day rather than being asked to accept a plan after it is completed. Our department has found the process to be a great opportunity to explain our information and to learn about specific interests and desires of the angling public.

CONRAD ROWE

The fisheries management plans signal a successful partnership in resource management. True, they require time and effort. But they are based on information and data, and best of all, they require all participants to consider the interests and expectations of others. Finally, these are dynamic plans which require continuous evaluation with an opportunity to make modifications as we learn more or as public interests change.

If you fish in Montana, you should participate in these efforts.

Al Elser
Deputy Director for Field Operations
Montana Department of Fish, Wildlife & Parks

DAVID CONKLIN

Turn to page 15 for an article on Rosebud Battlefield State Park.

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Front Cover—Red Rock Lakes National Wildlife Refuge has long been a year-round haven for trumpeter swans, such as the one so beautifully captured by **Mike Logan**. But the number of swans wintering at the refuge has increased dramatically and managers are worried.

Back Cover—Montana's trout capture the fancy of photographers such as **Conrad Rowe**. In 1991, trout—and their fishy relatives—will lure an estimated 300,000 anglers to Montana waters.

CALL OF THE TRUMPETER

by DEBORAH RICHIE

MORRIS HIRSHFIELD

LISTEN. WE STRAIN to separate the muffled calls. From across Hebgen Lake comes a wild cacophony: honks of geese, quacks of ducks, whistles of tundra swans, and the melodic, two-note horn of trumpeter swans. Birds lift from the lake, circle, and settle. At last, the fluttering V's of white move toward us. I imagine powerful wings brushing the sky, painting a sunset across the span of the Madison Range.

Hundreds of swans are gathering on this fall evening just west of Yellowstone National Park. Many are tundra swans passing through on their way south. A smaller number of trumpeters share this magnificent scene, some recently arrived from Grande Prairie, Alberta, more than 800 miles to the north.

At last, the unmistakable "koh-hoh" of trumpeters sounds above our perch on this wooded hillside. Seven trumpeters fly low in a line, long necks outstretched, their flight purposeful. Engulfed by ancient rhythms, we catch the pulse of migration—if only momentarily.

For two days, our group of 12 lived and breathed swans as part of a trumpeter swan course offered by the nonprofit Yellowstone Institute. Guided by Yellowstone National Park biologist Terry McEneaney, we counted an impressive number of swans on October 27-28, 1990: 218 trumpeters and 1,700 tundra swans. We visited a great complex of lakes, rivers, and mountains still wild enough to sustain a species that came close to vanishing from the lower 48 states—the trumpeter swan.

The trumpeter swans we were seeing belong to the Rocky Mountain population, which includes swans that dwell year-round in what is commonly known as the Greater Yellowstone Ecosystem, as well as those that breed in Canada and winter in this tri-state area of Montana, Idaho, and Wyoming. An estimated 500 to 600 birds spend summers here, and more than 2,000 now winter in the area.

MARK LAGERSTROM

Biologists also delineate a much larger Pacific Coast population, comprised of trumpeters that nest in Alaska and winter on the Pacific Coast north of the Columbia River. Numbering about 8,000, these birds constitute the vast majority of the trumpeters existing in North America.

A much smaller group forms the Interior population, scattered flocks that originated through transplanting efforts.

SIXTY YEARS AGO, conservationists would have exulted over the news of our group's 218 trumpeters spotted in a weekend. In 1933, only 66 trumpeter swans could be found in the entire United States. This majestic bird, whose winter and summer ranges once covered most of North America, nearly vanished due to the combined onslaught of market hunting and habitat loss.

Between 1823 and 1880, the Hudson Bay Company sold 108,000 swan skins to London markets. Traders sought swans for women's powder puffs, feathers for quill pens, and, to a lesser extent, for meat. But plowing of the western prairies proved even more devastating, as the trumpeter's prime breeding grounds were lost to human settlement. Only on lakes within and near Yellowstone National Park did they cling to a tenuous existence in the lower 48 states.

When the alarm bell rang in the 1930s for this largest of all North American waterfowl, public attention focused on a high-elevation valley of prairies and lakes defined by an east-west mountain range that forms a rugged barrier between Montana and Idaho. Here in the Centennial Valley of southwestern Montana trumpeters still courted, constructed nests on top of muskrat houses, and raised their cygnets (young) in the shadow of the Centennial Mountains.

In 1935, specifically to save the trumpeter swan, the U.S. Department of the Interior established the 42,525-acre Red Rock Lakes National Wildlife Refuge. Because geothermal activity on the refuge ensures that a few acres of water remain ice-free even when temperatures dip to 40 below zero, trumpeters can live year-round there.

For years, refuge managers attempted to help the swans by building floating nest platforms safe from the dangers of rising spring waters and by feeding them in winter. More recently, Ducks Unlimited constructed a new water control structure to improve water management on the lower marsh. The swan population gradually grew. Parents taught their offspring the pattern of living without migration. Each winter, the numbers swelled with the arrival of the Grande Prairie swans from Alberta.

Today, the refuge appears much the same as it did in the 1930s. To get there requires jouncing over gravel roads, passing rough-hewn ranch buildings and groves of aspen, their white trunks juxtaposed against sky and the prairie that sweeps out from forest and mountain edge. Moose wend their way through willow bottoms. Sandhill cranes dance in the spring. Eagles and hawks seek prey from the air. On our drive to the refuge, we spied a shorttail weasel popping up from between the grates of a cattle guard. A burrowing owl peered at us from its perch on a weathered wood fence post.

THE EXUBERANCE OF LIFE extends to swans as well. Last year in late winter, some 800 to 900 swans were counted on the refuge.

Yet, managers are worried. Carl Mitchell, assistant refuge manager, says the ideal number of wintering swans is 300 to 450, which the refuge has generally sustained for many years. However, the haven is becoming overcrowded. Two factors are dramatically increasing the winter flock of swans at Red Rock Lakes.

First, while the swans in the Yellowstone area have maintained a steady or at times declining population, the wintering swans from Canada are "climbing off the charts," according to Mitchell. The increase in Canadian birds started in the 1970s and has continued with no end in sight, he says.

Second, another favorite wintering area to the south in Idaho has changed from protected haven to a potential death trap for swans.

Recently, Harriman State Park on the Henry's Fork of the Snake has suffered periodic freezing of the waters and a drastic decline in aquatic vegetation necessary to feed as many as 800 wintering trumpeters. In 1989 more than 100 trumpeters died of starvation when the Henry's Fork froze. After the Bureau of Reclamation released water from the upstream Island Park Dam to melt the ice, the remaining swans were able to dip down and feed on the life-sustaining plants. However, the sudden breakup of ice tore out many aquatic plants.

The needs of summer irrigators in

combination with recent drought ensures that the problems of the river freezing from low water flows will continue. Even with coordination of water flows to help the swans, the aquatic plants are faring poorly. Heavy grazing by a growing number of swans in combination with ice damage and low flows severely limits plant growth.

Rather than migrating farther south to historic wintering grounds, trumpeters at Harriman join the flocks at the already crowded Red Rock Lakes Refuge or remain in an undependable stretch of river.

This past winter, officials from the U.S. Fish and Wildlife Service led a trapping and transplanting effort that moved swans from Red Rock Lakes and Harriman to potentially new wintering grounds to the south. Battling fiercely cold temperatures and working with unproven swim-in traps and nets, a cadre of biologists from Idaho, Montana, and Wyoming succeeded in catching and moving 340 swans as of late January of 1991. Two swans died during the trapping.

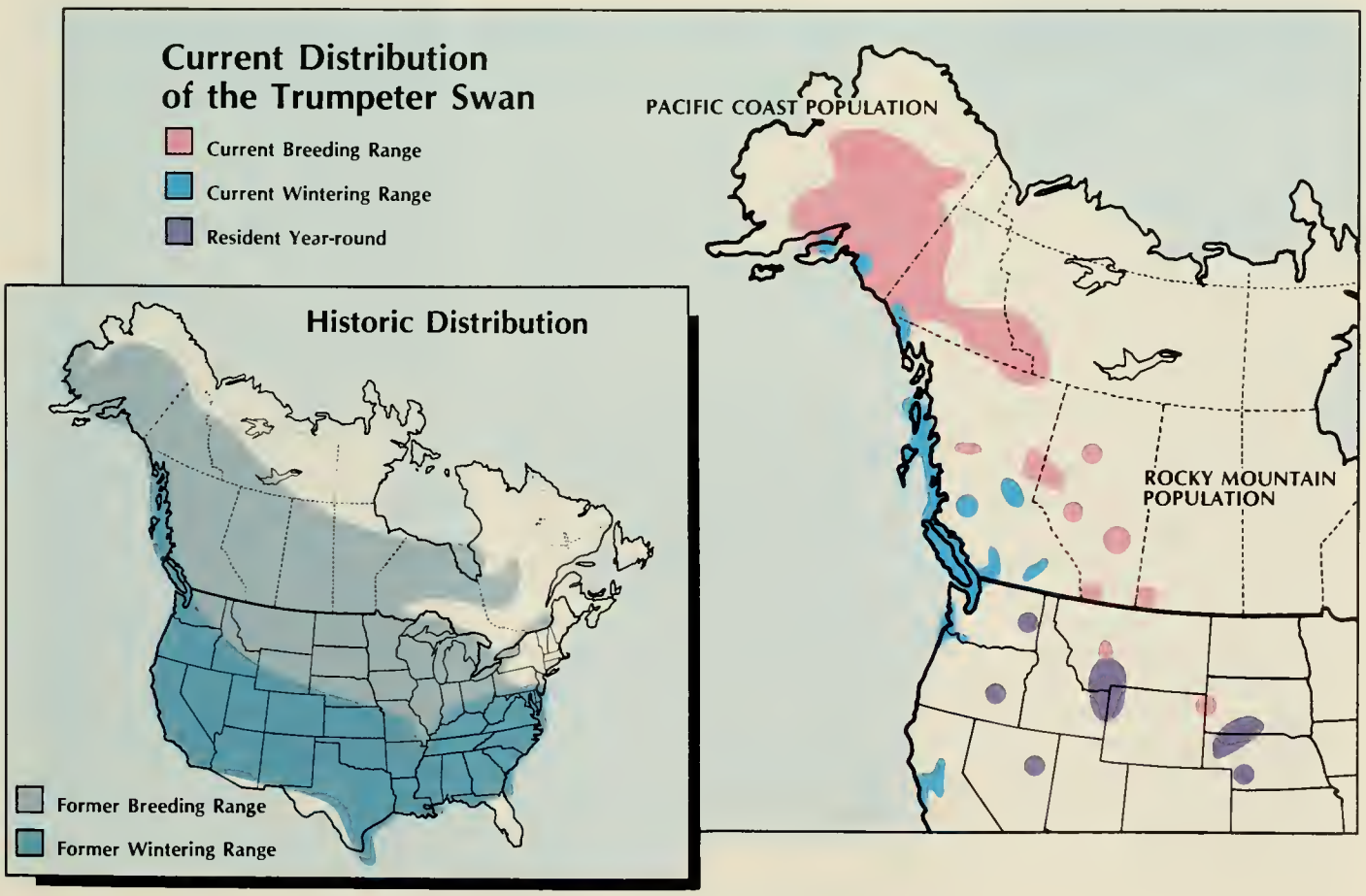
All the swans were neck-banded and moved to carefully chosen sites in Idaho, Wyoming, and Utah. Most of the 116 swans from Red Rock Lakes found a new winter home at Bruneau Dunes State Park, south and east of Boise, selected for its quiet waters, excellent bed of aquatic plants, and lack of power lines. The crucial question is whether these birds will return to Bruneau and other selected wintering areas next winter. If they do, biologists may continue to move swans during the next few winters.

Mitchell and other biologists believe that swans have lost the ability to migrate to wintering grounds outside the Greater Yellowstone Ecosystem. Unlike some birds where migration appears to be instinctive, swans must pass on this knowledge from adults to juveniles.

Jeff Herbert, statewide waterfowl coordinator for the Montana Department of Fish, Wildlife & Parks in Helena, describes the dilemma of swans

HARRY ENGELS

The rust color commonly seen on the heads of Yellowstone trumpeters is actually staining of the feathers from iron in the mud.



DAN & CINDY HARTMAN

funneling down from Canada into this confined winter range as a "winter bottleneck."

A high priority must be to assist trumpeters in expanding their winter range, Herbert says. At the same time, he believes it is important to minimize potential conflicts between these expansion efforts and existing tundra swan and snow goose hunting zones.

Soon, biologists hope to see trumpeter swans thriving on summer and winter grounds without depending on transplanting or artificial feeding efforts. The more swans that share those precious few acres of open water at Red Rock Lakes, the greater the chance of diseases like avian cholera spreading among the flock. In the meantime, the twice-a-week feeding at Red Rocks prevents swans from starving and helps them meet the energy demands of breeding. Because swans have been fed for the past 55 years at Red Rock Lakes, it will take some careful planning to change the system, according to Mitchell.

Beyond the challenge of communicating a new message to swans on where home lies, waterfowl managers must continue to find solutions to other problems limiting swans from fully returning to historic ranges beyond the Greater Yellowstone Ecosystem. Habitat loss still poses the greatest problem for swans and all waterfowl. Lead

Viewing Tips at Red Rock Lakes

Trumpeter swans tend to be shier and less accepting of human presence than many other birds. If families of swans are approached too closely, the adults may fly from their brood. The scattered cygnets then become vulnerable to predation, chilling, or starvation.

Visitors to Red Rock Lakes are prohibited from approaching swans more closely than 400 yards. Throughout the summer, parts of the refuge are closed to protect birds raising their young.

The best way to see trumpeters is to let the birds set the pace, says Carl Mitchell, assistant refuge manager. For example, if you are sitting quietly at Upper Lake Campground and trumpeters swim in closer than 400 yards, the birds have made that choice. You are not disturbing them.

Binoculars, spotting scopes, and cameras with long lenses enhance the experience of seeing swans and the myriad other birds sharing the wetlands. Look for avocets, long-billed curlews, willets, and great blue herons. A total of 258 bird species have been recorded in the Centennial Valley, most of them in summer.

About 10,000 to 15,000 people make the journey to Red Rock Lakes each year, mostly between Memorial Day and October. The refuge can be approached either from the east, leaving I-15 at Monida and traveling 28 miles on a dirt road, or by traveling west from Highway 87 or 20 past Henry's Lake over 30 miles of dirt road. The latter route is usually open by mid-May.

The refuge is part of a wildlife viewing network in Montana described in the "Montana Wildlife Viewing Guide," available for $5.95 at Fish, Wildlife & Parks offices as well as in bookstores. The 113 sites are marked with signs carrying a binocular logo, now recognized in Montana and other western states as the symbol for wildlife viewing.

For more information on trumpeters at Red Rock Lakes, write: Refuge Manager, Red Rock Lakes National Wildlife Refuge, Monida Star Route, Box 15; Lima, MT 59739. Phone: 406/276-3347.

ROBERT E. BARBER

Red Rock Lakes National Wildlife Refuge.

Trumpeter or Tundra?

Trumpeter swans are one of three swan species found in North America. They are joined by tundra and mute swans.

Mute swans, the classic European swans we know from city parks, are almost as large as trumpeters, but can be easily distinguished by their bright orange bills.

Tundra swans, formerly known as whistling swans, can be difficult to distinguish from trumpeters. Their ranges overlap in Montana and their features are similar. Adults of both species are white with black bills and black legs. Tundra swans are considerably smaller. A tundra male weighs about 16 pounds, while a trumpeter male weighs about 26 pounds. Unless they are standing side by side, however, it is difficult to tell one from the other by size alone.

Look for several clues to tell the difference:

- Does the swan call like a "Hong Kong taxi" (biologist Terry McEneaney's description)? That's a trumpeter. Or, if the swan's call is an off-tone whistle, it's a tundra.
- Do you see two swans greeting each other with heads bobbing and wings quivering? If so, they're probably trumpeters. If they greet each other with a head-stretch and a wing quiver, you are most likely seeing tundras.
- Can you see a fine yellow stripe in front of the eye? Tundra swans have this, but trumpeters don't. However, tundra swans may not always have a yellow line, so don't count on this clue entirely.
- Is the head rounded, the bill a bit dish-shaped, and the eye distinct from the bill? That's a tundra. Trumpeters have a straighter head profile, a heavier, straighter bill, and an eye indistinct from the bill.

These are just a few clues. Always find more than one before making your decision.

Top photo: trumpeter swan.
Middle photo: tundra swan.
Bottom photo: mute swan.

poisoning and power line collisions also contribute to swan mortality.

As many as one-third of the trumpeters tested at Red Rock Lakes showed elevated levels of lead. Despite the banning of lead shot in Montana and its gradual phasing out in other states, swans can continue to stir up lead deposited on lake bottoms years earlier. In addition, one lead fishing sinker can be a lethal dose for a swan. Even when swans survive lead poisoning, it can seriously weaken them and render them more vulnerable to disease and predation.

The journey of trumpeter swans from season to season, year to year, is fraught with perils. Biologists speak of helping swans learn to migrate to places their ancestors knew. We, too, must remain open to learning how we can alter our lifestyle to ensure that the call of the trumpeter continues to resound across wild rivers and lakes. ■

Trumpeter Tidbits

- Male swans are called cobs. Females are called pens and the young are cygnets.
- Males are larger than females.
- The wingspan of a male swan can be eight feet, while that of a female is six feet.
- The rust color commonly seen on the heads of Yellowstone trumpeters is actually staining of the feathers from iron in the mud.
- Trumpeters mate for life unless a mate is lost. Only then will they mate again.
- These are long-lived birds, surviving to be as old as 29 years in the wild.
- Trumpeters pair in the fall and most do not establish a territory and nest until their fourth summer. Pairs build nests of cattails, bullrushes, and other vegetation, often on top of muskrat houses. The nests may be used year after year.
- A trumpeter egg weighs an average of 11.5 ounces, one of the largest in the bird world. Pens incubate the four to six eggs laid in late May or early June for 33 to 37 days.
- The gray-colored cygnets fledge by the end of September.
- Trumpeters feed by tipping, gathering aquatic vegetation below the water's surface. Cygnets eat insects during the first month to build strength.
- Adults moult their flight feathers in summer and cannot fly for a month or more.

ROCK CREEK MANAGEMENT

Planning for the Future

by DENNIS WORKMAN

IN 1988, DUE TO CONTROVERSY over proposed new fishing regulations, the Montana Fish and Game Commission directed the Department of Fish, Wildlife & Parks (FW&P) to write fisheries management plans for the state's most important waters. The public was beginning to demand a stronger voice in department decisions, and the commission wanted the department and resource users to work together in planning the future of these vital rivers and streams.

In FW&P's Region 2—west-central Montana—Rock Creek was the first choice for a fisheries management plan. Rock Creek is a blue ribbon trout stream, nationally acclaimed for its wild rainbow, brown, cutthroat, and bull trout. It is readily accessible from a county road, several U.S. Forest Service campgrounds, and from state land. In fact, 80% of the Rock Creek drainage—nearly half a million acres—is national forest land, split almost equally between the Deerlodge and Lolo National forests.

Management of Rock Creek has been controversial for many years. In the early 1970s, sportsmen voiced their concerns to the Forest Service about Rock Creek's fisheries and watershed in the face of heavy logging demands. The ensuing dialogue led to a 10-year moratorium on logging in the drainage, and formation of the Rock Creek Advisory Committee, a diverse group of local people representing a broad spectrum of interests. Negotiations between the national forests and the advisory committee eventually produced a consensus that the aquatic resources were the most important values to be protected. Subsequently, the Deerlodge and Lolo National Forest supervisors signed an agreement that committed these forests to monitoring aquatic resources when land use activities could have impacts on perennial streams in the drainage.

In the mid-1980s, national forest managers wrote forest plans to guide their actions through the next decade. In response to an outpouring of public interest, the Lolo and Deerlodge National forests included a chapter in each of their plans dealing exclusively with the Rock Creek drainage.

No sooner had one controversy subsided when another one erupted. This time a group of utility companies announced plans to construct a 500 kV power line across the lower end of the drainage. Once again, local Rock Creek defenders rose to the occasion. Negotiations between Trout Unlimited, the National Wildlife Federation, the Montana Wildlife Federation, and the utility companies led to siting the power line as unobtrusively as possible, without towers on the valley floor. The settlement also resulted in establishment of a $1.65 million trust fund to be used in protecting fish, wildlife, and habitat quality and in preserving the unique natural values of Rock Creek. The fund, held by the Montana Department of Natural Resources and Conservation, is administered by a committee of citizens dedicated to sound resource management in the drainage.

JIM TOTH

The subject of controversy for many years, Rock Creek is a blue ribbon trout stream nationally acclaimed for its wild rainbow, brown, cutthroat, and bull trout.

It is evident from this history of public and agency involvement in Rock Creek that an acceptable fisheries management plan should include the ideas and opinions of the public as well as those of local and federal governments. Although FW&P was the lead agency, the department and the two national forests worked together in writing the fisheries management plan for Rock Creek. The department's regional supervisor and the district rangers from the two forests cosigned a letter to Rock Creek users asking them to comment on problems they had observed or experienced on the creek, and later provided a public forum for discussion of the problems.

We established a citizen's advisory committee to bring a broad, balanced spectrum of opinions and perspectives to the writing of the plan. This committee included several Rock Creek landowners and private businessmen, as well as representatives of special interest organizations, local governments, federal agencies, and the general public. The committee assisted us in identifying problems and issues, formulating management alternatives, and reviewing drafts of the plan, as well as providing helpful ideas and constructive criticism throughout the writing process. We kept the public informed through news releases and informational meetings, and circulated the draft fisheries plan for review and comment before finalizing it and presenting it to the Fish and Game Commission.

The plan is designed to guide our fisheries management actions from September 1989 to September 1994. The major planning elements addressed are fisheries management, fisheries habitat, recreational use, drainage area and stream corridor, and agency management. The following sections provide a brief summary of the management strategies for each element and highlight commitments the department has made to the public and to Rock Creek resources.

Fisheries Management

Fisheries management on Rock Creek has changed significantly over the years. Stocking of catchable rainbow trout began in the 1940s and continued until 1972, when research on other Montana rivers showed stocking to have detrimental effects on wild trout populations. Wild trout management promised larger trout and a quality in the fishery that was not possible with put-and-take hatchery planting. But despite the shift to wild trout, liberal limits and heavy fishing pressure resulted in a steadily declining catch rate, decreased catch per angler, and a decline in average size of trout in the creel. The trends suggested that Rock Creek was not able to produce trout as fast as they were being harvested, and that large trout were the first to be kept for the frying pan. As the quality of the fishery declined, fishing pressure fell off dramatically, from 12,268 angler days per year in 1959 to only 5,816 angler days per year in 1978.

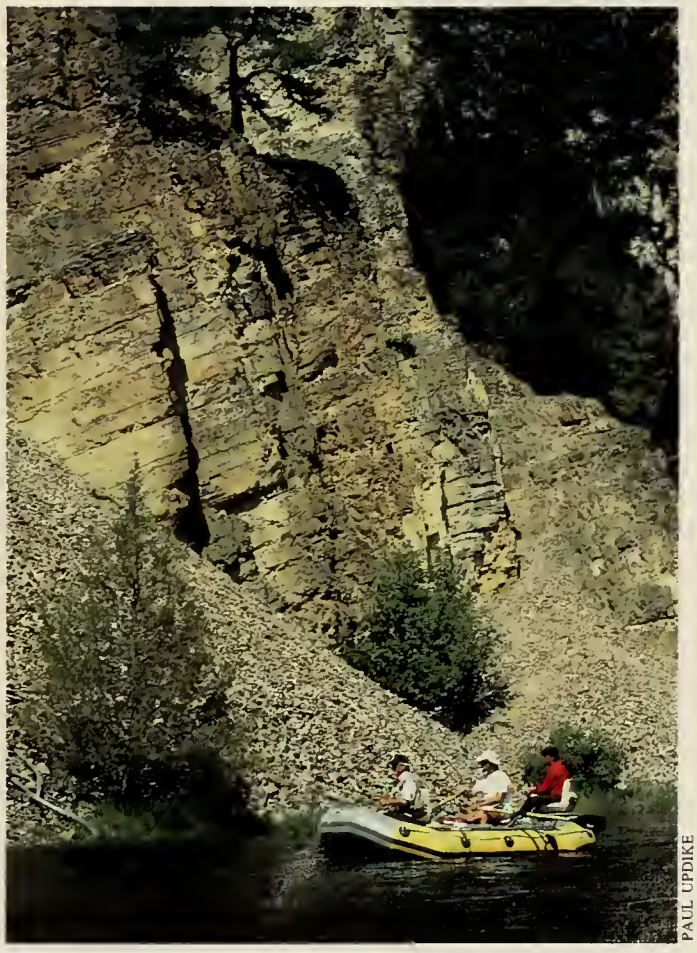
The goal for Rock Creek was to increase the opportunity for fishermen to catch trout 14 inches and larger. To meet this goal, angler harvest had to be reduced. Trout had to be spared from the frying pan for four or five years to allow them to grow to 14 inches or more.

In 1979, the creel limit was reduced from 10 fish to three fish, only one of which could be over 14 inches. Also, one section of the creek was designated catch and release. Another change in 1986 established the regulations we have today: three trout under 12 inches or two under 12 and one over 20 inches. This "slot limit" requires the release of all trout between 12 and 20 inches, but lets people keep a few small ones for the table or one trophy fish. Another regulation implemented in 1986 restricts the use of live bait to fishermen under 15 years of age.

In heavily fished waters, wild trout management requires greater emphasis on fishing for sport and less emphasis on fishing for food. In 1958, 48,000 hatchery trout were harvested from Rock Creek. In 1986, only 4,000 wild trout were harvested, but another 34,000 were caught and released. In addition to providing bigger, stronger fish in a natural environment, wild trout management provides fish to anglers at the lowest possible cost.

The department has monitored trout populations and angler catch in three study areas since the early 1970s. The Valley of the Moon section is located about three miles upstream from the mouth. Rainbow and brown trout make up 60% and 40% of the population, respectively. Before 1979, rainbow trout numbers in this section were too low to get good population estimates. The number of rainbows over 14 inches increased by more than 300% between 1979 and 1986 due to reduced angler harvest and cessation of hatchery stocking. There was also a dramatic increase in trout in the 10- to 14-inch class. Brown trout numbers varied over this period with no apparent trend.

In the Fish and Game section, located about 14 miles



PAUL UPDIKE

upstream from the mouth, the population is predominantly rainbow trout, with small numbers of cutthroat, brown, bull, and brook trout. Between 1979 and 1986, rainbow trout greater than 14 inches increased by more than 200%, and trout 11 to 14 inches long increased by 325%. These increases were most likely due to the more restrictive fishing regulations and the cessation of hatchery stocking.

The Hogback section is located about 30 miles upstream from the mouth. The population is similar to that of the Fish and Game section, but cutthroat trout are present in higher numbers than in the other sections. The average trout here is smaller than in the lower sections because the creek is smaller and growth rates are slower. The number of rainbow trout greater than 12 inches increased by more than 300% between 1979 and 1986 in response to the management changes. In addition, cutthroat trout numbers increased significantly.

Throughout the planning process, the public told us we should continue managing for trout over 14 inches, that they liked the present condition of the fishery, and that we should continue to monitor trout populations and angler use to protect against degradation of the wild fishery. Before we implement any management changes, such as changes in fishing regulations, we will involve the public in the decision-making process.

Fisheries Habitat

Success in wild trout management depends directly on high quality trout habitat. This habitat consists of water quality, water quantity, the bed and banks of the creek, and the land and vegetation along the banks, or riparian area. Poor land use practices pose the greatest threat to trout habitat quality.

Rock Creek water quality monitoring is conducted by the two national forests and the U.S. Geological Survey. Water quality in Rock Creek is generally excellent, although fine-grained sediment has the potential to degrade the fishery. Washed into the creek from stream bank erosion, logging, road surfaces, agricultural fields, and mining operations, such sediment could fill the spaces between streambed cobbles, destroying habitat for young trout and smothering aquatic insects upon which trout feed. Clean streambed substrate is essential to the health and well-being of the wild trout population.

Mining operations could also pollute the creek with toxic metals from mineralized rock formations that are exposed to weathering and leaching. Around the turn of the century, there were many active mines in the drainage, but today a sapphire mine and a few small placer gold operations are the only active mines. Several proposed mines could potentially affect Rock Creek water quality if they are developed.

Water quantity is protected by the department's instream flow right granted in 1971. In 1969, the Montana Legislature passed a law giving FW&P the opportunity to appropriate instream flow rights on the state's 12 "blue ribbon" trout streams. In the Missoula area, instream flow rights have been secured for Rock Creek and a major portion of the Blackfoot River.

The streambed and banks of Rock Creek are in very good condition. Maintaining healthy riparian growth—shrubs, trees, and grasses—will insure that sediment from stream bank erosion will not become a problem in the future.

Most people perceive Rock Creek fisheries habitat to be in good condition, but they are concerned about sediment and water quality. We will protect trout habitat by monitoring land use activities in the drainage and communicating any concerns to the land-managing entities. The department will protect its instream water rights, administer the Stream Protection Act, and assist the conservation districts in administering the Natural Streambed and Land Preservation Act to protect the

See ROCK CREEK, page 14

PAUL UPDIKE

More restrictive fishing regulations and cessation of hatchery stocking have led to a dramatic increase in the number of rainbow trout over 14 inches.

ON THE SMITH: NEW RULES

DAVE BOOKS

The Smith River originates in the Castle and Little Belt mountains of west central Montana. The various tributaries of the Smith join; then approximately 25 miles northwest of White Sulphur Springs, the river enters a deep, narrow canyon over 50 miles long. Camp Baker is the last public access to the river for 61 miles until Eden Bridge, 20 miles south of Ulm.

The Smith River Canyon is a tremendous natural resource with unique qualities. It draws visitors from all over Montana and across the nation, and recreational use of the canyon for floating and fishing has increased from only a handful of floaters in the 1960s to several thousand per year in more recent times.

The increased popularity of floating the Smith, combined with a restricted float season and a high percentage of private land in the corridor, prompted the Department of Fish, Wildlife & Parks in the late 1970s to assume the responsibility of reducing impacts on private landowners as well as providing benefits to recreational users. The department has utilized management tools such as a river guide, provision of overnight boat camps, and a river ranger program.

FW&P was given additional authority and responsibility through passage by the 1989 Legislature of HB655, the Smith River Management Act. This act was intended to provide for the "administration and regulation of floating, camping, and recreational use of portions of the Smith River waterway...adoption of rules regulating recreational use...user fees by rule and allocating the fees...a penalty for violation..." and "an immediate effective date."

On February 8, 1991, the Fish, Wildlife & Parks Commission approved a fee structure for both recreational and commercial floaters on the Smith. Some key points of the plan include:

- Before floating the river, floaters MUST register at Camp Baker;
- Tags which must be affixed to each vessel will be issued;
- Maximum group size is 15;
- Fees and limit on group size can be waived for certain educational groups;
- It will cost $15 per person for recreational floaters age 12 or older;
- A fee of $15 per client, outfitter, or outfitter staff will be assessed;
- For outfitter concessionaires, the fee is $175 per group;
- Full fees are in effect—May 1-Sept. 30; no fees—Nov. 2-Feb. 29; all other times—one-half price.

Money collected will go directly into management and operation of the Smith River—to help pay for toilets, maintenance of launch and take-out sites, trash removal, and maintenance of camp sites, signs, float gates, and other such items.

The fee structure was the result of over four months of public input and revision. Before making its decision, the commission reviewed over 80 comments and heard oral testimony.

If you have questions, contact the FW&P Great Falls office at 454-3441 or the Helena headquarters at 444-2535—*Doug Habermann (Great Falls), Jeffrey Tiberi (Helena), Parks Division*

THINK SAFETY!

As you look forward to warmer weather and the chance to recreate on the state's reservoirs, lakes, and rivers—THINK SAFETY. The week of June 2-8 has been designated as National Safe Boating Week with the goal of informing and encouraging boaters, floaters, and anglers to be properly

prepared for their water adventures.

In 1990, five Montanans died in boating-related accidents, and only one of the victims was wearing a life jacket or personal flotation device (PFD).

Almost all accidents can be prevented if the boat operator uses common sense and follows simple navigation rules. According to 1990 reports, most accidents were caused by rough or hazardous water conditions, negligence, excessive speed, faulty equipment, and alcohol use.

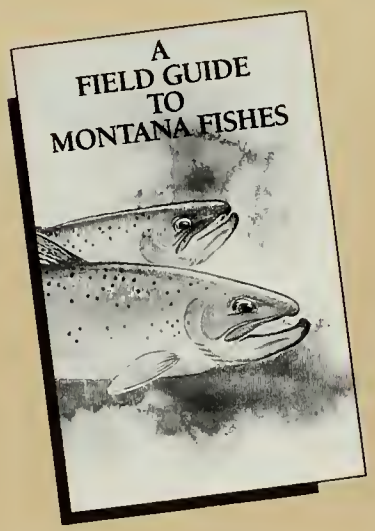
For a safer boating experience, follow these precautions:

- Have properly sized, Coast Guard-approved PFDs available and easily accessible to each person on board. Children under 12 and water skiers must wear a PFD.
- Carry essential safety equipment (a fire extinguisher, anchor, bailer, and first aid kit) and be prepared for foul weather. If you see a storm approaching, head for the nearest dock.
- Choose a designated driver for your boat. Alcohol consumption is involved in more than half of all boating accidents. After a day on the water, boaters become fatigued by the effects of sun, glare, wind, vibration, and heat. Alcohol consumption worsens the situation by further impairing coordination, response time, and reasoning.
- Don't overload the boat—and be careful if you must move about in it. A boat's capacity plate indicates its maximum safe outboard horsepower and carrying capacity. Standing in a boat raises its center of gravity, which increases its instability. Many boaters have fallen overboard when they stood up to cast a line, land a fish, or change positions.
- Keep a sharp lookout for objects and

other boats. Most non-fatal boating accidents involve collisions between two boats or a collision between a boat and an object such as a rock or a floating log.

• Tell a neighbor or friend your travel plans. If an emergency occurs, rescuers will know where to start their search.

For more information about boating safety or for a copy of Montana's boating safety manual or boating rules and regulations, contact the Department of Fish, Wildlife & Parks, 1420 East Sixth Avenue; Helena, MT 59620 (406/444-2535).—*Liz Lodman, coordinator, Recreational Vehicle Safety Program, Conservation Education Division, Helena*



Fish Guide Available

George D. Holton has written a concise, easily understood handbook for identifying Montana's fishes. Holton was chief fisheries biologist and assistant administrator of the department's Fisheries Division for 30 years.

"A Field Guide to Montana Fishes" consists of a simple, visual key to fish families arranged by type and position of fins on the back. Within families, look-alike fishes are grouped for easy comparison.

Color paintings of 30 Montana game and sport fishes aid in identification, as do black and white illustrations of other species. Distinguishing features for each fish are prominently displayed, and habitat characteristics and distribution maps are included.

"A Field Guide to Montana Fishes" is available for $9.95, plus $1.50 shipping, from: Fisheries Division, Department of Fish, Wildlife & Parks, 1420 East Sixth Avenue; Helena, MT 59620.

BILL STRATTON

Montana Safari Club International member Joyce Stratton presents a $2,500 check to FW&P's Ken Walcheck for the department's new interpretive center in Miles City.

Donations Boost Interpretive Center

Donations from Safari Club International, the Montana Chapter of Safari Club, and two eastern Montana sportsmen's clubs have provided a big boost for a natural resources interpretive center at the department's regional headquarters in Miles City.

According to Ken Walcheck, the department's Miles City information officer, the Custer Rod and Gun Club and the Rosebud-Treasure Wildlife Association each donated $500. The Montana Chapter of Safari Club International donated $2,500 and that donation was doubled by a matching grant from Safari's national office.

The $40,000 center will provide visitors with information on eastern Montana's fish and wildlife resources, as well as the region's historical, geological, and cultural significance, Walcheck said.

These contributions will be used to help fund a display to explain the role of hunting in wildlife management in eastern Montana. Randy Hall, president of Safari's Montana chapter, said, "If our children and their children are able to hunt in the future, it will be because of projects like the Region 7 interpretive center."

To donate to the project, write: Interpretive Center, Department of Fish, Wildlife & Parks, Rural Route 1, Box 2004; Miles City, MT 59301.

National Fishing Week: June 3-9

Thousands of anglers will head for rivers, lakes, and streams from June 3-9 to enjoy the rewards and values National Fishing Week has been set aside to promote. Sponsors of the event hope these anglers will "Take a Friend Fishing," the theme of this year's celebration.

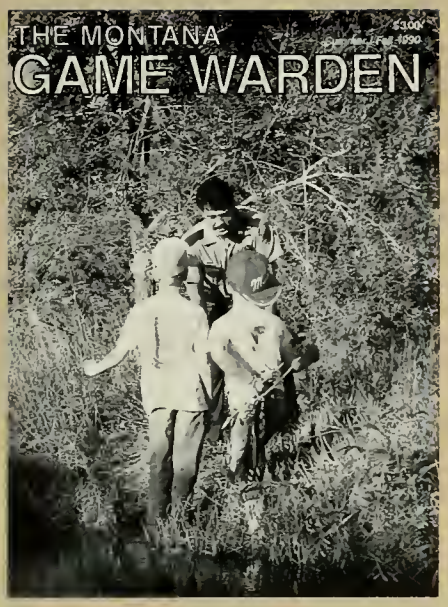
National Fishing Week, sponsored annually by the American Fisheries Society, the Sport Fishing Institute, state and federal fish and wildlife agencies, and many other public and private groups, serves as a focal point for promoting fishing as a healthy, wholesome recreational activity and for acknowledging the importance of protecting the fisheries environment.

Larry Peterman, administrator of the Fisheries Division for the Department of Fish, Wildlife & Parks in Helena, said he hopes Montana anglers will take this opportunity to reflect on the quality and diversity of the fishing Montana offers and share their angling adventures with a non-fishing friend.

Game Wardens Produce Magazine

The Montana Game Warden is a magazine by the game wardens of Montana and it tells the story of wildlife law enforcement in the state.

The first issue was published in spring of 1989 by the Montana Game Warden Association. The association is the professional, non-profit organization of



Montana's game wardens, funded solely by them.

When the first issue came off the presses, it was the "culmination of a year-long effort that would let the public know what was happening in the world of wildlife law enforcement in Montana," according to Editor Jim Heck. Heck, a warden for the department in Bozeman, added, "But it was also more than that. It was an opportunity for wardens to talk about all of the interesting situations they face in their day-to-day work—it was a chance for us to share some of our knowledge."

The magazine comes out twice a year. It is written and produced entirely by wardens working in their spare time as volunteers. The color publication features articles on legal cases of major interest, hunting and fishing information, general outdoor advice, and much more. The articles about legal cases are of particular interest, Heck said. Unlike newspaper accounts written by reporters who are piecing together whatever bits and pieces of information they can gather, these accounts are written by the wardens who actually worked on the cases. Actual case photographs are also included. "We also reserve a certain amount of space for stories dealing with some of the more humorous aspects of the job," Heck said.

A one-year subscription costs $6. If you would like to receive the magazine and a listing as a "Warden Sponsor," the cost is $15 per year. To subscribe, send your check to: *The Montana Game Warden*, P.O. Box 7179; Bozeman, MT 59715.

"The Full Circle," a Department of Fish, Wildlife & Parks film that chronicles the progression of wildlife management in Montana, has received the New York Film Festival's bronze medal.

The Montana film competed against entries from 43 countries. In addition to its bronze medal, the film's script, by Marshall Riggan, was selected as the top entry in the Environmental and Ecology category.

The New York Film Festival award is the second one for "The Full Circle." Last May, the film received the CINE Golden Eagle and was selected to represent the United States in the Wildlife and Ecology competition at the EKO Film Festival in Ostava, Czechoslovakia.

The film, directed by FW&P cinematographer Mike Gurnett, is available free for screenings at meetings, conventions, or in the classroom. It is also for sale in 16mm ($300), 3/4-inch video ($39.95), or 1/2-inch video ($29.95). To reserve a print or order a copy, contact the FW&P Film Center, 930 Custer Avenue West; Helena, MT 59620 (406/444-2426).

Catch and Release on Video

"Gentle Hands, Firm Intentions" is the title of a new 9 1/2-minute video produced by the Department of Fish, Wildlife & Parks Film/Video Unit.

The video shows state-of-the-art techniques for handling and releasing wild trout. Its purpose is to make sure the angler catches and releases his/her trout with minimal stress and injury to the fish.

To borrow a copy, contact the Film/Video Unit at 930 Custer Avenue West; Helena, MT 59620 (406/444-2426). ■

ROCK CREEK

Continued from page 10

riparian area and the bed and banks of the creek.

RECREATIONAL USE

The increasing use of boats by anglers on the creek is the issue of greatest concern among recreationists. The department first noticed float fishing in 1978, and in 1981 began receiving complaints regarding boat traffic on the creek. In 1986, about 5% of all anglers were float fishing, and by 1988 the number had increased to 10%.

Float traffic is generally heaviest during the salmon fly hatch in June. At this time the creek is running high from snowmelt and is practically impossible to wade. However, the floating issue has been debated since the early 1980s and tends to divide people into two distinct groups. Those who oppose floating contend that (1) Rock Creek is too small to accommodate both wading and floating anglers at the same time, (2) boats disturb the fish and make them stop biting, (3) floaters have an unfair advantage in being able to reach places on the creek inaccessible to wading anglers, and (4) frequent interruptions by floaters lower the quality of the experience for wading anglers.

In 1985, the Forest Service, using its authority to control commercial use of national forest land, began regulating fishing outfitters on Rock Creek. They limited the number of outfitters who could use the creek to four and established regulations in a federal special use permit. The regulations set a maximum number of boat trips, designated where guided parties could camp, assessed fees for that use, and established standards for use of the creek and for record-keeping. This permit, which was in effect for three years, ended on December 31, 1988. It was reissued for one additional year to allow time for completion of the fisheries management plan.

While this permit controlled commercial use of boats, non-commercial floating was not restricted. In March 1988, the Forest Service and the FW&P co-authored a letter asking for public comment regarding float fishing. Response to that letter became the initial source of issue identification for the fisheries management plan.

In 1989 the Forest Service required commercial outfitters to end commercial floating when the creek flow dropped to 700 cubic feet per second or on June 30, whichever came first. It also required that commercial boats be marked with a number clearly identifying the outfitter. Private floaters were asked to voluntarily stop floating when the commercial outfitters stopped. In 1990, the Montana Fish and Game Commission made it unlawful to fish from boats after June 30, in concert with Forest Service regulations on commercial outfitters.

In the future the department and the Forest Service will produce a brochure on floating etiquette to help Rock Creek floaters understand the sources of conflict among users on the creek. The department will monitor angler harvest and user attitudes. If recreational use begins to adversely affect the quality of the experience, additional regulatory authority may be needed.

DRAINAGE AREA, STREAM CORRIDOR

Land use within the drainage, and especially in stream riparian zones, can influence water quality, stream stability, and fish habitat. Although the department has little authority in land use issues, we are concerned with those issues because of their potential effect on fisheries in the drainage.

The department intends to take an active role in the review, discussion, and permitting of land use activities within the drainage to minimize potential negative effects. We will continue to work with the national forests, private landowners, and others whenever possible.

AGENCY MANAGEMENT

As with drainage area and stream corridor, this section of the plan deals with land uses over which the department has limited authority but maximum concern. Land use is the key to the long-term health of wild trout fisheries. Thus, poorly managed grazing, improperly designed roads, or mines with inadequate water quality treatment can lead to the demise of a trout fishery. Land use activities are difficult to monitor and even more difficult to correct once problems develop.

The department will review land use proposals from government agencies and, whenever possible, projects from private landowners. Our purpose will be to guide land use away from activities that could be detrimental to Rock Creek.

CONCLUSION

The Rock Creek Management Plan is a product of public discussion on how a highly valued, irreplaceable resource should be managed. It is intended to guide management for the five-year period from September 1989 to September 1994. It is one of 10 plans that will be completed for fishing waters across the state in the near future. These plans allow you, the public, to play an important role in the conservation of our fisheries resources, and we urge you to become involved. ■

Clutter Got You Behind the Old Eight Ball???

Stack 'em up in a MONTANA OUTDOORS binder—and start all over with a clean slate.

One binder holds six issues. To order yours, send $6 (includes postage) to: MONTANA OUTDOORS, Department of Fish, Wildlife and Parks, 930 Custer Avenue West; Helena, MT 59620.

KRISTI DUBOIS

ROSEBUD REVISITED

by DOUG MONGER

THE SITE THAT WE KNOW today as Rosebud Battlefield State Park has a long and rich history, replete with buffalo, Indians, vision quests, battles—and even what may have been the Montana Territory's first rodeo.

A brief look at the area's history might help us better understand the events that unfolded here. Before white men explored or exploited this intermountain region of the Rockies, the land belonged to the Shoshone, the Snakes. But the Indian nations warred. By the 1780s, the Crows dominated. By the 1800s, the Sioux and Cheyenne emerged as the forces to be reckoned with, provoking hostilities with the Crows. During the 1860s, the Crow and Sioux continued to battle over control of the lands that were home to the vast buffalo herds.

Before 1860, the main reason whites came into the West was for furs, particularly beaver. It didn't take long for the beaver population to plummet, and whites were left with no good reason to head into the intermountain region. This inactivity was reinforced by the hostile actions between the Crow and Sioux, activity which discouraged all but the most adventuresome explorers.

THE LATE 1860s was an unsettled time in the young United States. The Civil War had recently ended; countless soldiers returned home, while others continued their military careers.

Then an ingredient was added which brought whites to the frontier in hordes—gold! As more and more people wanted to come West to try their luck, the Army was under increasing pressure to secure a route to gold fields in Montana via the Bozeman Trail. Forts were built and skirmishes fought. After two years, the Army abandoned its forts as a condition of the 1868 Fort Laramie Treaty, a treaty which also delineated the great Sioux reservation as a sovereign nation. After the 1868 treaty, many Sioux and Cheyenne became agency Indians while others, among them Sitting Bull, chose to remain in unceded Indian land in Powder River country, Territory of Montana.

The treaty kept whites out of the reservation for only a short while, a time even further compromised by government survey parties of 1872 and

1873 and the Black Hills Expedition of 1874. When gold was discovered in the Black Hills, conflicts between natives and the invading whites put mounting pressure on the government which unsuccessfully tried to negotiate and purchase the Hills from the Sioux. Infractions and tensions on both sides grew. Gold seekers were clearly invading the reservation.

In December 1875, the Indian Bureau ordered all Indians to return to the reservation by January 31, 1876, or they would be reported to the War Department. Even if the Sioux had wanted to return to the reservation it would have been impossible considering the short notice, the difficulty of winter travel, and the shortage of winter supplies. In February 1876, the matter of Indians off the reservation was turned over to the War Department.

IN SPRING OF 1876, the War Department dispatched three Army columns to force the Indians onto the reservation. The military theory behind the three columns was that any one of them might encounter Indians and force them back to the reservation. Each column was to act and function independently, although simultaneously. Once the columns had departed from their respective forts, communication between them was difficult, although Gen. Alfred Terry's column used couriers for communication with Fort Abraham Lincoln.

Col. John Gibbon left Fort Ellis near Bozeman to patrol eastward along the Yellowstone River to prevent the Indians from "escaping" into central Montana or possibly into Canada.

Gen. Terry commanded the second column which left Fort Abraham Lincoln near Bismarck in the Dakota Territory, on May 17, 1876. Terry intended to work westward along the plains toward the Missouri and Yellowstone drainages. His command provided a later historical footnote on June 25, 1876, through the actions of Lt. Col. George A. Custer.

From Fort Fetterman, Wyoming, Gen. George Crook commanded the third leg of the three-pronged force. This arm, known as the Bighorn Expedition, drove northward. They entered the Montana Territory and, based on scouting reports, headed into the Powder River region.

Gen. George Crook

In one noteworthy skirmish, Gen. Crook sent Col. Joseph J. Reynolds to capture a village of sleeping Cheyenne along the Powder River. Col. Reynolds' initial charge drove the warriors from their village, allowing the Army to destroy the contents of the village and capture the Indian ponies. When the Cheyenne retaliated, Col. Reynolds left the battle site and returned to the mouth of Clear Creek, up the Powder River near the Montana-Wyoming border. He reported a successful foray to Gen. Crook. It later became clear to Crook that although the village had been destroyed, Reynolds had not dealt a crippling blow to the enemy, since only one or two Indians had been killed. Further, the Indians later recaptured their pony herd.

ROSEBUD
BATTLEFIELD
STATE MONUMEN
This 5,000 acre site has been purchased by the Montana Department of Fish, Wildlife and Parks using your coal tax dollars.
The acquisition of this site would not have been possible without the dedicated effort of Slim Kobold, longtime resident of the battlefield site
Future development will include road improvements, signs, a picnic area, miscellaneous facilities, and seeding native vegetation.
Given time, these rolling hills and valleys will again appear just as they did when the forces led by General Crook and Crazy Horse clashed over 100 years ago.

DAVID CONKLIN

One of Montana's 60 state parks, Rosebud Battlefield looks today much as it did in June of 1876 when General Crook and his men fought Sioux and Cheyenne warriors.

Short of rations, Crook was forced to return to Fort Fetterman to resupply. Crook later reported, "Instead of finishing a war, the Reynolds battle had merely started one."

On May 29, Crook again left Fort Fetterman with over 1,000 men, supplied by 106 mule-drawn wagons and 250 pack mules. The column stretched out over four miles along the trail. They again headed north in pursuit of the Sioux, intending to drive them back to their reservation.

Although he was a seasoned veteran of Indian battles, Gen. Crook depended heavily on the scouting ability of Indian allies. On this outing, he planned to meet Indian scouts at the forks of Goose Creek, near present-day Sheridan, Wyoming, then proceed with his mission. Instead of reaching Goose Creek, Crook headed down the wrong drainage, became lost, and spent the better part of a week "exploring" Prairie Dog Creek. Crook retraced his route and finally arrived at the forks of Goose Creek. After this embarrassing false start, almost two weeks later (on June 14) Crook was finally greeted by 176 Crow and 86 Shoshone scouts, bringing his forces to nearly 1,300 men.

The Crows brought the news that the Sioux were probably camped on the Rosebud. Knowing the enemy was nearby, June 15 was a day of preparation for Crook and his men. Gen. Crook outlined his plans: The wagons were to be left at Goose Creek and the wagon stock were to be turned into saddle mounts. The men were to be equipped with four-days rations (hard tack, coffee, and bacon), one blanket, and 100 rounds of ammunition. While watching the infantrymen introduce themselves to wagon mules who had never worn a saddle before, Head Scout Frank Grouard described the scene: "I never saw so much fun in all my life. The valley for a mile in every direction was filled with bucking mules, frightened infantrymen, broken saddles, and applauding spectators." After a long day of preparation and probably the Territory's first rodeo, the Army was ready to go

on the evening of June 15.

At 5 a.m. on June 16, Crook's troops left their camp near present-day Sheridan, Wyoming, and headed north toward the headwaters of Rosebud Creek where the Sioux had been reported. The column followed what is today the route of U.S. Highway 87. Near present-day Decker, Montana, the lead scouts spotted a small herd of buffalo. They shot some, and feasted on the animals. This action worried Crook because he feared the shots would alert the Sioux to the Army's presence. Proceeding north, Crook called the column to a halt at 7:30 p.m. They had covered 35 miles that day. They camped at the headwaters of the south fork of Rosebud Creek.

Two Moon

Meanwhile, Crook's fears had been realized. The shots of the buffalo hunters earlier in the day had alerted Little Hawk, a Cheyenne warrior, to the soldiers' presence. Little Hawk rode 35 miles back to the Indian village on Reno Creek, near present-day Hardin, Montana. Sioux and Cheyenne warriors prepared for battle. Led by Young Two Moon, Two Moon, Spotted Wolf, and Crazy Horse, warriors left camp through the night and headed for the Rosebud. Not knowing exactly where they would confront the soldiers, some warriors traveled via Reno and Corral creeks while others converged on the Rosebud via Sioux Pass.

BY 3 A.M. ON THE 17th, Crook's men were up and stirring. By 6 a.m., they were on the trail, headed down Rosebud Creek. About 8 a.m., Crook called a halt for a morning break. Some men dozed, while others played cards or boiled coffee. The friendly Indian scouts were off to the north searching for the Sioux. During the morning bivouac, the men could hear rifle shots to the north; most assumed the shots came from the Crow and Shoshone scouts shooting buffalo. But the shots came nearer. Suddenly the scouts appeared from the north shouting, "Lakota, Lakota [Sioux, Sioux]." The Battle of the Rosebud had begun.

The Crow and Shoshone scouts immediately mounted a counterattack allowing Crook and his men to become organized. Crook moved out of the immediate creek bottom and established an initial command post on low-lying hills north of the creek. He deployed Captain Frederick Frederick Van Vliet to the south to cover his rear, while deploying Capt. Anson Mills to his right (east) to drive attacking Sioux out of some timbered hills. To his front and left, Gen. Crook deployed Captain Guy V. Henry and Lt. Col. William Royall.

Capt. Guy V. Henry

Early in the battle, one of the most heroic events took place. In the area now known as "the Gap," the Crow and Shoshone scouts attempted to ambush some Sioux and Cheyenne warriors. A Cheyenne warrior, Comes-in-Sight, had his horse shot out from under him. Afoot and vulnerable, he made an easy target for soldiers. Seeing her brother's fate, Buffalo-Calf-Road-Women rode into the battle and rescued her brother. Because of this act of bravery, Cheyennes still refer to this skirmish as "Where the girl saves her brother."

As the battle waged, Mills continued to occupy Crook's right flank while Royall made advances to the left (west). Crook advanced toward the north and established a command post known later as "Crook's Hill."

Royall was chased (or was lured) farther and farther to the northwest in pursuit of elusive Indians. At one point, Royall and his men were at least a mile from Crook's Hill. After he set up a field post so he could have a full view of the battle, Crook realized Royall had overextended himself. Crook sent a messenger calling for Royall to reconnect himself with the rest of the Army, a task which would take the remainder of the day. Because of the lack of cover and the intensity of the fighting, it was here on Royall's Ridge that the greatest numbers of Royall's soldiers were killed.

As the battle unfolded, the Sioux and Cheyenne made constant attacks either on the troops or into the valleys in attempts to capture the soldiers' horses so the soldiers would have to dismount to fight. One of four soldiers held the horses of three other soldiers while they fought. The Sioux were a formidable enemy. After the battle, Captain Anson Mills said of the Sioux, "...the Indians proved then and there that they were the best cavalry soldiers on earth. In charging up towards us they exposed little of their person, hanging on with one arm around the neck and one leg over the horse, firing and lancing from underneath the horses' necks so that there was no part of the Indians at which we could aim."

The battle continued and Crook became restless and wished for it to end. Convinced that a Sioux village was near, Crook deployed Mills with one-third of the total column down Rosebud Creek to take and hold the village.

Capt. Anson Mills

Nothing inspires a warrior in battle more than to see the back of his enemy. At least this was how it appeared to the Sioux as Mills headed downstream with one-third of the command. The Sioux attacked with new vigor. This part of the battle resulted in the greatest toll on Crook's troops.

With the assistance of Capts. Andrew S. Burt and Thomas Burrowes, Royall attempted to rejoin Crook's main command. Crook, realizing his dire situation, ordered Mills recalled from his march down the Rosebud. Mills questioned the order, stating he "had the village near at hand and could hold it." This was a bit of an overstatement because the village was 35 miles away on Reno Creek.

As Mills was recalled to the main battlefield by Royall's retreat, Royall was finally able to rejoin the main command on Crook's Hill. Mills left Rosebud Creek to his left and re-entered the battle in a position which outflanked

many of the Sioux warriors. With Crook's command now reunited and seeing Mills in their rear, the Sioux called off their attack and moved toward the northwest. It was 2:30 p.m., and the battle was over.

During the day, Crook's forces suffered 10 fatalities, including one Indian scout, and 21 men were wounded. His troops had expended an estimated 25,000 rounds of ammunition. Crook reported killing 13 "hostile Indians."

After the battle, Crook, his men, and the scouts returned to Goose Creek to resupply. Crook's scouts were so disgusted with him for not pursuing the Sioux that they left him on Goose Creek, thus disabling the general who needed scouts to move about in Indian territory.

The Sioux returned to their camp on Reno Creek where they would destroy Lt. Col. George A. Custer's command on the Little Bighorn.

Many historians have unfairly blamed Crook for Custer's fate just one week after the Battle of the Rosebud. Remember, however, that each column was intended to act independently of the others. Each was thought to be capable of subduing the Sioux and Cheyenne and driving them back to the reservation. Although Crook did not pursue Crazy Horse and his warriors, he had no way of knowing the exact whereabouts or actions of Terry coming up the Yellowstone from the east or Gibbon moving eastward from Fort Ellis. Crook had met the best cavalry on earth—in the largest Army-Indian battle ever fought on the northern plains—and had survived. Crazy Horse and his warriors would win the battles of 1876, but they would eventually lose the war and be driven onto reservations.

Recent History

After the 1870s conflicts, the Rosebud area prospered and cattle replaced gold as king. The battle site was first homesteaded in 1898 by August Ahrens. Ahrens sold out to Jim Davis in 1908. In 1911, Elmer "Slim" Kobold homesteaded 640 acres adjacent to the battlefield. In 1920, Kobold purchased the Davis place, later enlarging his holdings to about 5,000 acres.

During the homestead era, the Rosebud battle was only a distant memory to a few soldiers who were still alive and had fought in it and to some history buffs. In 1934, on the 58th anniversary of the battle, a chapter of Daughters of the American Revolution from Billings dedicated a monument commemorating the battle. About 1,000 people attended the ceremony, including four Cheyenne survivors of the battle: Louis Dog, Limpy, Weasel Bear, and Beaver Heart. Except for an occasional visitor, the site remained quiet for the next few years.

Limpy

In the early 1950s, J.W. Vaughn, an amateur historian from Colorado, began looking for information about the battle. After many trips onto the battlefield with Kobold and a primitive metal detector, Vaughn pieced together the story of the battle for his book, "With Crook at the Rosebud."

In the 1960s, using Vaughn's book as a guide, Kobold and a Miles City historian, Joe Dent, placed markers (which still stand) at key spots. The only other markers at the site are the faded remains of rock cairns placed at notable points by the Cheyenne and relocated for Vaughn and Kobold by Cheyenne historian John Stands in Timber, grandson of battle participant Lame-White-Man.

In the 1960s and '70s, the battlefield was threatened by a new adversary: coal development. Below the surface lies a 40-foot-thick seam of black gold, a seam easily within reach for strip mining. Realizing the importance of what he had, Kobold campaigned to save the battlefield. In 1972, his efforts partially paid off when the site was designated to the National Register of Historic Places. In 1976, with revenue from the Coal Severance Tax, the state purchased the battlefield. In 1978, 102 years after the battle, 86-year-old Slim Kobold signed the papers officially creating the Rosebud Battlefield State Park; he died soon after.

DOUG MONGER

A 4,000-year-old buffalo jump in Rosebud Battlefield State Park.

Stories to Tell

As one of 60 Montana state parks, today the Rosebud Battlefield is protected. The battleground looks much as it did on June 17, 1876; visitors can walk through it and imagine clashing warriors of opposing cultures. The fields of the Kobold holdings have been reseeded to native grasses, and the surrounding countryside is still predominantly used for grazing.

Today's visitors will find only a handful of interpretive panels and a small brochure describing the battle. Clearly, Rosebud Battlefield State Park has many valuable stories to tell and its potential is not yet realized. In addition to the battle itself, consider the lessons visitors could learn from prehistoric eagle-catching pits, vision quest sites, and a buffalo jump almost 4,000 years old. Think what the two homestead sites on the property could contribute to knowledge about Montana's rich agricultural history. The coal seam running beneath the battleground has its own tale.

Rosebud Battlefield State Park is managed by the Parks Division of the Department of Fish, Wildlife & Parks Miles City office. The challenge is to preserve native grass and shrub species and to protect the streamside zone while providing for wildlife habitat and livestock in a rest-rotation grazing system. Maintenance funds come from the Coal Severance Tax and from fees collected at other state parks. No general tax dollars or license dollars support Rosebud Battlefield State Park.■

Kansas City, Here I Come!

by GARY OLSON

AT THE TIME, I didn't think he looked particularly adventuresome. But after 14 years as a wildlife biologist, one finally learns that Mother Nature can sometimes shatter or at least bend one's notion of "hard and fast" biological rules. Take an elk for example—now there's an animal that's about as predictable as night and day...or so I thought.

As the helicopter cautiously circled the young bull, Rosie made the final adjustments to the net gun. Seconds later, our victim was firmly entangled in the small net. I adjusted the plastic radio collar around his neck while Larry and Rosie worked to free him from the net that had helped in his capture. Bull #964, named for the frequency of the radio transmitter placed on his neck, was released minutes later to return to his mountain haunts.

This spike (yearling) bull was one of ten elk captured in February 1987 in the Sweetgrass Hills of northern Montana adjacent to the U.S.-Canadian border, thanks to the efforts of Larry Schweitzer and John (Rosie) Rosalind, who provided the helicopter and net-gunning expertise. I was going to monitor the radio-collared elk to determine effects of archery and rifle hunting on herd movements.

I saw Elk #964 on two occasions during March 1987, but I couldn't find him after that. Attempts to find the bull by using airplanes equipped with an electronic scanner were unsuccessful. However, Canadian authorities reported

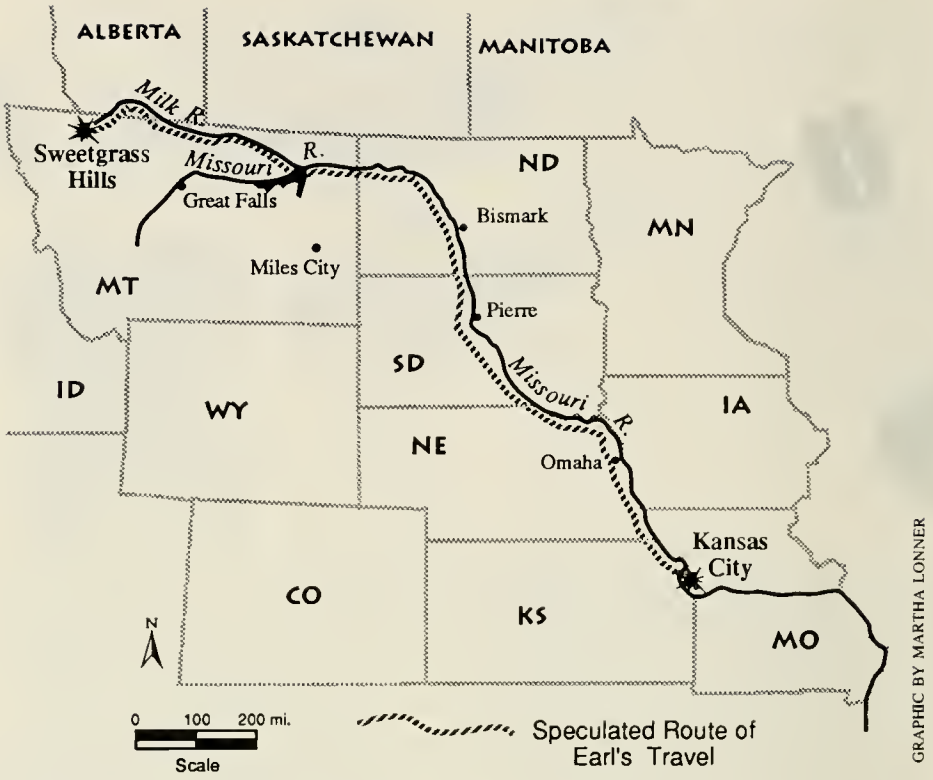
GARY OLSON

MISSOURI DEPT OF CONSERVATION

Of 10 elk captured and radio-collared in northern Montana's Sweetgrass Hills in February 1987, only #964 had a serious yen for travel. When he was recaptured by the Missouri Department of Conservation near Kansas City in October 1990, his collar (above) was still intact.

a collared elk in Cypress Hills Provincial Park on the Alberta-Saskatchewan border in May 1987, but no radio signal was detected there either. The Cypress Hills are home to a resident elk herd. The area, about 80 airlines miles from Montana's Sweetgrass Hills, includes a west to east zone of low, wooded foothills stretching from eastern Alberta into western Saskatchewan.

At the time of this report, however, other Sweetgrass Hills bulls had moved into an area of Alberta roughly halfway to the Cypress Hills. No collar markings were described by Canadian authorities, so it is difficult to say for certain which marked bull they actually saw. By then, I assumed that the elk had either moved out of receiving range or the transmitter had failed.



GRAPHIC BY MARTHA LONNER

THAT'S ABOUT ALL there was to the story—until an October 9, 1990 phone call ironically interrupted my attempt to summarize the Sweetgrass Hills project. Jim Pyland, Missouri Department of Conservation, politely introduced himself and then launched into a 10-minute narrative about this elk that had Kansas City in an uproar. My first thought was, "What's this guy selling?" But, after several more minutes and an accurate description of the type of collar I use, he convinced me there really was something strange going on.

The frequency written on the radio transmitter was #964 and matched the bull that had been missing from the Sweetgrass Hills since April 1987. When Jim told me the initials G.O. were also on the transmitter, my mind went into biological overdrive. Neither of us could fathom an explanation other than this bull traveled to Missouri on his own. The overriding questions of how and why will probably remain unanswered, but the possibilities are endless.

IT'S 1,100 AIRLINE MILES from the Sweetgrass Hills to Kansas City. If one follows the Missouri River, there are at least 1,800 miles of river bottoms, tributary drainages, lakes, highways, cities, farms, and fences to traverse. Add to this the dogs, curious people, and speeding 18-wheelers, and you have a kind of Lewis and Clark Expedition in reverse!

Thanks to Jim Pyland and his Department of Conservation crew, we have a chronological account of #964's travels in Missouri.

A March 22, 1990, news article from the Independence Examiner reported that the Missouri Department of Conservation had "numerous reported sightings of an antelope wearing a white collar....Other reports have speculated the animal was a moose or elk." A Kansas City Star story on March 22 reported that "They don't know where he came from or how he wound up in Missouri. They think, however, that he is the elk seen by hunters last fall north of the Missouri River, in Ray and Chariton counties. The elk has apparently taken up residence in a heavily wooded area between the Independence Center Shopping Mall and housing divisions along the R.D. Mize Road."

The Jackson County Advocate reported in a March 29 article, "Residents traveling on Highway 291 in eastern Jackson County might use a little extra caution, because they might hit an adult bull elk. One caller to the Department of Conservation reported seeing the biggest deer in the world." In an outdoor column, the March 29 edition of the Kansas City Banner reported, "A resident who lives near R.D. Mize said she had seen the animal but thought it was some kind of horse. However, when all the stories [appeared] of an antelope, elk or moose...in the area, she knew that the 'horse' she had seen was really the now famous elk."

William Ewing found a strange looking deer antler while mushroom hunting the week of April 15, along the Little Blue River in Independence. Pyland inspected it, and his identification inspired an excited Ewing to promptly return to the site. He found the other shed antler just 20 feet from the first one.

On April 28, 1990, the Kansas City Star reported the elk had been hit by two cars on Missouri 291 two days earlier. The article stated that one person had been sent to the hospital with $3,500 of damage to her vehicle. It further stated, "I tried to slow down, but I caught its tail end. My first thought was that it was a big dog because it had this white collar." Apparently the bull was hit by a Ford Bronco and was then spun into the path of another auto, smashing into

the driver's side and wrapping around the windshield. The car's roof was damaged as well.

EYEWITNESS ACCOUNTS of the incident vary from the elk merely limping off the roadway to flying over the roof of the car into the brush along the highway. Pyland and several other biologists searched the accident site but found no trace of #964. The June 21 Independence Examiner contained the headline, "Officials Fear Visiting Elk May Be Dead."

However, the June 23 Kansas City Star jubilantly proclaimed, "He's Alive: Elusive Elk Reappears." Reports of the bull had started again on June 21, and all accounts described a bull with a large set of antlers. The Jackson County Advocate quoted an Independence resident who sighted the elk on June 21, "The animal looked healthy overall except that his back end wasn't quite tracking right." The white collar was specifically described.

The metro office of the Missouri Department of Conservation continued to receive reports of the elk throughout the summer. The September 20 Kansas City Star carried an article of particular interest, "Independence's mysterious elk was trotting north down Adams Street toward a garage sale about 8 a.m. Wednesday when an impatient driver honked his horn. The startled animal took off in such a hurry that he left foot-long divots in Woodford and Joyce Roberts' yard. He jumped several chain link fences and vanished behind a chorus of barking dogs. 'I ran in and called 911,' said Charlotte Pearson, who was having the sale. A half hour earlier, about 60 persons gathered around an enclosed retention basin near Phelps Road and 39th Street to watch the elk graze."

According to the November 1990 *Wapiti*, the Rocky Mountain Elk Foundation's newsletter, the elk was even known to attend barbecues, PTA meetings, and backyard birthday parties. Pyland was quoted, "During the daytime, you could stand within 200 yards of him. He'd come out, stretch, and walk around and didn't seem to be alarmed."

By late September, Department of Conservation officials decided to tranquilize the bull and move him to Missouri Town in Fleming Park, where other elk are kept. Several attempts to lure "Big Guy," as some locals called him, out of hiding were unsuccessful, including efforts by experienced elk callers. Missouri officials set up a clever ambush for the morning of October 7. The bull had been seen using a stretch of railroad tracks connecting heavy wooded cover and a small farm completely surrounded by suburban Independence. Elk #964 was darted, tranquilized, and moved to a pen in the wild animal enclosure, a county-owned wildlife park containing several 30-acre pastures.

Dr. Robert Herzog, a veterinarian, gave the 5-year-old bull a clean bill of health, and could not find any outward sign of ill effects from the car accidents. According to Dr. Herzog, "He looked good tip to toe, and he looked like he'd been living like a king."

The bull's shed antlers found in April 1990 were those of a typical six-point bull. Pictures of his October 1990 capture reveal only five points on each

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Montana's Sweetgrass Hills

GARY OLSON

ANDY GERRARD

Now known as Earl, Montana's "roving ambassador," elk #964 has found a permanent home at Fleming Park, near Independence, Missouri.

side, with some abnormal growth, especially the brow tines and antler tips. This might be attributed to his adventure on Highway 291 and resulting trauma.

Elk #964's apparent territory covered a strip of land approximately nine miles long, consisting of cropland, rolling hills, and timber. "But keep in mind," Pyland said, "that he was completely surrounded by the city, including the Drumm Farm and the Independence Shopping Center." According to Pyland, Interstate 70, a multi-lane highway, may have prevented the bull from moving even farther into Missouri. "It was probably just too much for him, especially after the episode on Highway 291," Pyland speculated.

When the Missouri Department crew removed his collar, inside they found the transmitter with #964 and the initials G.O. After contacting 12 states and two Indian tribes, Pyland was relieved to find the solution to something that had baffled him for months.

NEWS OF THE ELK that traveled from Montana to Missouri was carried by the Associated Press, CBS, and numerous local radio stations. He was nicknamed "Earl," and he made the front pages of major newspapers all over the West.

How he did it will probably never be known. The fact that a yearling bull elk moved from his "home" area is, however, nothing unusual. In Montana, young male elk move up to 120 miles from their maternal home ranges. Elk #964 may have overdone it a bit, and there's probably room for him somewhere in the "Guinness Book of World Records."

"Take an elk for example—now there's an animal that's about as predictable as night and day. . . or so I thought."

Ruth Laverty, metro media specialist with the Missouri Department of Conservation, says that while elk are native to Missouri, the last native elk killed there was in 1840. In 1969, an elk was killed by a Missouri hunter who had mistaken it for a white-tailed deer. The ear-tagged animal had traveled approximately 500 airline miles from eastern Wyoming to Missouri.

Because Earl's travels may be the longest on record for an elk, the Missouri Department of Conservation, the Rocky Mountain Elk Foundation and the Montana Department of Fish, Wildlife & Parks are planning to work cooperatively on an educational display about elk and elk migration. The display will be placed at Fleming Park where Earl now resides.

Montana Governor Stan Stephens has proclaimed Earl as Montana's "roving ambassador." Governor Stephens was quoted in the October 12 Kansas City Star, "When we found out he was being well cared for and had become a local celebrity in the Kansas City area, we thought it would be a good idea to make Earl somewhat of an ambassador for Montana's wildlife."

Media coverage of Elk #964's five-state trek may help us fill in his route of travel. So far, though, observations are limited to Montana, Missouri, and perhaps Canada. This particular bull elk reminds us that our knowledge of wild animals and their relationships with the environment are as dynamic as the winds that swirl around the Sweetgrass Hills. ■

A FATHER'S DAY LESSON

It was Sunday, June 17, 1990—a lovely early summer day in Montana. My family and I had gone to a nearby river for an evening of fishing. I found myself at a bend of the river a couple of hundred feet away from my wife and children. I was fly-fishing, standing a short way out in the water and casting to the opposite bank, when I noticed a small animal swimming upstream along the water's edge. It appeared to be a small muskrat, headed toward the very section of river I was fishing. Suddenly, it veered directly toward me. The little creature was no match for the heavy current and it was rapidly swept downstream.

I continued to watch as it fought its way across and noticed it was swimming somewhat clumsily, carrying its head high and splashing occasionally. I lost sight of it behind a grassy knoll just as it reached the bank.

Several minutes later, I waded to the bank to change my fly line. As I worked, I became aware of a sound like that of a puppy whimpering. I couldn't locate the source, but I could tell it was near. Suddenly, about 10 feet away, the tall grass parted and out stepped the small animal I had seen swimming, again coming straight for me.

My first thought was to move out of the way. When I did, the animal turned with me. It was only six feet away now, and I started talking to it, hoping that would help change its mind. But, no, it continued toward me. Finally, it was so close that I could see the small, flat tail of a baby beaver. It kept coming, first walking over the feet of my rubber fishing boots and finally turning and sitting down in front of me. I wasn't about to touch it, fearful that my scent might cause the parents to disown the little guy.

I figured the best move would be to just move away and not interfere. As I did so, the young beaver began crying even louder and attempted to follow me. I had seen a beaver lodge just upstream, so I decided to try to guide him in that direction. As he struggled to follow behind me, I discovered that baby beavers aren't built to walk through tall grass.

We were close to a short beaver run that led to the first and lower pool, so I led it in that direction, hoping that it would get in, recognize the pool, and swim home. Wrong again! It wasn't about to go anywhere I didn't, so I waded in. We made good time, but the pool started getting too deep for me, so I climbed out and walked along the bank with the little beaver following along in the water.

He seemed to know where he was going now, and I stopped to get my family's attention so they could see him. After doing so, I turned around to see what kind of progress he was making. He wasn't! Instead, he had climbed out of the water and returned to my side. I guess he was tired because he waddled over, climbed onto my boot, and hung on with his forepaws clamped around my ankle. I thought he must want a ride, so I carried him that way for the next hundred or so feet upriver.

About then he must have gotten hungry, because he climbed off and started chewing on some leaves. My family arrived then, and still the beaver showed no fear. Of course, the kids wanted to take him home as a pet, but we convinced them that the memories of this wild creature would be just as good—and longer lasting.

As it ate, we slipped away to the next pool and waited. Sure enough, the beaver appeared in the water below the dam. It first had trouble climbing, and we saw it swim back downstream. It came back, and this time it was successful in reaching the upper pool where the lodge was.

We worked our way to the opposite side of the lodge, then slipped around a hill and out of sight. The little beaver was safe, and we, too, headed home, happy over our Father's Day adventure.—*Gene Rau, Bozeman*

• *It's quite unusual that a wild animal will follow a human the way the young beaver did. But young animals are more likely to do so than older animals. This points out a key fact about wild animal behavior: It's unpredictable. Gene Rau did the right thing by not touching or picking up the young beaver. And his family did the right thing by enjoying the experience and* NOT *taking the animal home. If you see a young animal in the wild this spring that seems to be abandoned, leave it alone. The parents are probably nearby and you could cause them to reject the young creature.*—Vince Yannone, assistant administrator, Conservation Education Division, Helena

SOLDIER SAYS THANKS

Thank you and your department for sending the latest issue of *Montana Outdoors*. It raised the spirits of everyone in this unit as we look out upon the Saudi desert. We have also shared a copy or two with other soldiers and even with members of the British Army who are working with us.

My unit and all the soldiers here have appreciated the support in kind thoughts and prayers of everyone in the United States (in our case, Montana). I have even had the chance to run into other Montana units—the 159th Support Group from Helena—in our travels in this desert.

We all hope to be home soon, back with family and friends. Time will tell. Our unit's mission is getting oral interviews from combat units for historical purposes. Needless to say, it has been a busy one.—*Maj. Chris Marros, 50th Military History Detachment, Operation Desert Storm*

CAPTAIN SMITH, IF YOU PLEASE

I would like to make a comment about an item in "The Catchall" in the March/April 1991 issue.

On page 13, the photo shows Mike Stermitz receiving the Governor's Citation for Heroic Service and the caption identifies the officer on the far right as Warden Sergeant Randy Smith. However, he is wearing the collar insignia of a captain, is he not?—*Frank E. Willems, Helena*

• *You're right. Warden Sergeant Randy Smith is really Warden Captain Randy Smith. Thanks for catching our slip-up.*—Ed.

BOOK REVIEWS

THE DRY FLY: NEW ANGLES, by Gary LaFontaine, Greycliff Publishing Co., P.O. Box 1273, Helena, MT 59624; 1990, 320 pages, hard cover, $39.95 plus $2 shipping and handling.

Gary LaFontaine needs no introduction to serious fly-fishermen. His book "Caddisflies," published in 1981, is considered a model of angling entomology. No less an authority than Charles F. Waterman says simply, "Gary LaFontaine [is] one of the best writers on fly-fishing for trout."

LaFontaine's newest book, "The Dry Fly," is certain to join "Caddisflies" on the shelf of angling classics. A blend of scientific observation, theory, and opinion, the book breaks new ground in explaining how trout are attracted to dry flies. The main reason is that LaFontaine and his associates spent hundreds of hours either underwater with scuba diving gear observing how trout respond to different fly patterns or in canvas blinds at streamside charting trout behavior. They did most of their research on Montana rivers—the Big Hole, Madison, Clark Fork, Missouri, and others—which makes this book of special significance to Montana anglers.

One of the first things that LaFontaine learned from his underwater research is that a certain "triggering characteristic" dictates the initial response of a trout to a floating insect. It is this one strong visual characteristic—for example, the underwater portion of an emerging nymph or the wings of a mayfly dun—that first attracts the trout's attention. In fast water, the triggering characteristic may be the *only* important feature, since the trout doesn't have time to closely inspect the fly. When the current is slower, however, secondary features such as shape, size, and color become more critical. If something is missing, the trout may refuse the imitation at the last instant.

In a chapter entitled "Why Anglers Fail," LaFontaine asserts that many new trout anglers have been done a disservice by casting schools and media hype that emphasize long-distance casting. He points out that shorter, more accurate casts help the angler maintain line control and eliminate "drag"—the unnatural drift of a fly caused by the current acting on a taut line. He stresses the importance of moving slowly, stopping often to look for fish, and wading only when necessary. By keeping a low profile, wearing drab clothing devoid of shiny metal gadgets, and stalking carefully, the fisherman can get much closer to trout than he may have thought possible.

There is a tremendous amount of information in this book—far more than can be absorbed in one reading. It is, in a sense, a trout fishing textbook, but not one of those dry, stuffy tomes we suffered through in school. In fact, it's highly readable, interesting, and provocative. LaFontaine is not shy about offering opinions, but they are buttressed by his years of experience and keen analytical skills. It is not a book for beginners, although there is much in it that would benefit fishermen at any level of skill. "The Dry Fly" is a book that should be studied, thought about, and reread as one's knowledge of fly-fishing grows.—*Dave Books*

THE YEAR OF THE CHINOOK

You could call 1990 the year of the chinook.

It all began on June 17 when Stella Toavs of Wolf Point broke the previous chinook (king salmon) record. Her fish weighed 13.53 pounds; the previous record weighed 13 pounds, 4 ounces and it had been added to the list in 1989 by Neil Miller.

Then we move to July 22. Todd Bauer of Mandan, North Dakota, caught a chinook more than three pounds heavier than Toavs' fish. His weighed in at a healthy 16.77 pounds.

And then Bauer's record was broken by a fish weighing just about three MORE pounds. This 19.71-pound chinook was taken by Gene Mehl of Plentywood on August 16.

But Mehl's record was not destined for longevity. On September 2, **Jean Hankins** of Opheim caught a chinook about 6 1/2 pounds heavier than Mehl's; her record chinook weighed 26.23 pounds. Fort Peck was definitely THE spot for chinook: the previous record, the new record, and assorted contenders were all taken from Fort Peck Reservoir.

April Fools' Day was quite a day for Glasgow resident **Jim Liebelt**. On that day, Liebelt caught a 1.46-pound cisco at the Dredge Cut Trout Pond. His record-setter weighed .18 more than the 1988 record caught by Larry Garrow.

The sauger record has stood since 1975 when Raymond V. Johnston caught a 7-pound, 2-ounce sauger in Tongue River Reservoir. His record was broken November 13 when **James Jessen** of Glendive caught a 7.57-pound sauger on the Yellowstone River near Custer.

Terry L. Druyvestein of Missoula knocked Marvin Loomis' 5.11-pound smallmouth bass off the list with his 6.09-pounder. He caught his smallmouth at Hell Creek Marina on Fort Peck Reservoir. Loomis' 1987 record also came from Fort Peck.

Tongue River Reservoir was the spot for both old and new white crappie records, but **Greg Johnston** of Ranchester, Wyoming, caught a 2-pound, 6-ouncer that unseated the 2-pound, 2-ouncer caught by Drew Jackson in 1978.

Richard Roberts of Chinook added another line to Montana's record list—the tiger muskellunge. The Chinook resident took his 7.70-pounder on H.C. Kuhr Reservoir.

What do you do if you think you have caught a record fish? First, you must catch the fish legally. Second, your fish should be weighed before witnesses on a government-inspected scale such as those found in most grocery stores. Weigh the fish as soon as possible after catching it. Fish can lose precious ounces—ounces that can spell the difference between a record-breaker and an also-ran. Third, the fish must be positively identified, preferably by a Department of Fish, Wildlife & Parks employee. It's also a good idea to take color photographs of the fish to help resolve any identification problems.

Look at it this way: If one record was broken four times in 1990, it could happen again in 1991.—*Kay Morton Ellerhoff*

MONTANA'S RECORD-SETTING FISH (1990)

SPECIES	WEIGHT	ANGLER	YEAR	LOCATION
Arctic grayling	2 lbs. 10½ ozs.	Steve Houser	1986	Hyalite Reservoir
Bigmouth buffalo	32 lbs. 6 ozs.	Gary Lundman	1979	Missouri River (Slippery Ann Game Station)
Black bullhead	1 lb. 11 ozs.	Mike Mitchell	1977	Horse Creek (McCone Co.)
Black crappie	3 lbs. 2 ozs.	Al Elser	1973	Tongue River Reservoir
Blue sucker	11.46 lbs.	Doug Askin	1989	Yellowstone River (near Miles City)
Bluegill	2.64 lbs.	Brent Fladmo	1983	Peterson's Stock Dam
Brook trout	9 lbs. 1 oz.	John R. Cook	1940	Lower Two Medicine Lake
Brown trout	29 lbs. 0 ozs.	E.H. "Peck" Bacon	1966	Wade Lake
Bull trout	25 lbs. 10 ozs.	James Hyer	1916	unknown
Burbot (ling)	17.08 lbs.	Jeff E. Iwen	1989	Missouri River (near Wolf Point)
Carp	38 lbs. 8 ozs.	Don Bagley	1986	Eyraud Lakes
Channel catfish	25.89 lbs.	Gordon Wentworth	1984	Fort Peck Reservoir
		Tom Hilderman (tie)	1988	
Chinook (king salmon)*	**26.23 lbs.**	**Jean Hankins**	**1990**	**Fort Peck Reservoir**
Cisco	**1.46 lbs.**	**Jim Liebelt**	**1990**	**Dredge Cut Trout Pond**
Coho salmon	4 lbs. 14 ozs.	Irven Stohl	1973	Fort Peck Reservoir
Cutthroat trout	16 lbs. 0 ozs.	William D. Sands	1955	Red Eagle Lake
Freshwater drum	20 lbs. 7 ozs.	Richard C. Lee	1987	Fort Peck Reservoir
Golden trout	4 lbs. 8 ozs.	Tom McGillvray	1989	Lightning Lake
Goldeye	2 lbs. 14½ ozs.	Vance "Bubba" Kielb	1989	Irrigation canal (west of Malta)
Kokanee (salmon)	5 lbs. 15 ozs.	Forrest Johnson	1976	Pishkun Reservoir
Lake trout	42 lbs. 0 ozs.	Dave Larson	1979	Flathead Lake (east shore)
Lake whitefish	10 lbs. 0 ozs.	Ruby Mutch	1986	Lower St. Mary Lake
Largemouth bass	8 lbs. 2½ ozs.	Juanita A. Fanning	1984	Milnor Lake
Longnose sucker	3.27 lbs.	Ray Quigley	1988	Marias River
Mountain whitefish	5 lbs. 1½ ozs.	Mervin "Frog" Fenimore	1987	Kootenai River
Northern pike	37 lbs. 8 ozs.	Lance Moyler	1972	Tongue River Reservoir
Northern squawfish	7.25 lbs.	Loyal Herreid	1987	Lower Flathead River
Paddlefish	142 lbs. 8 ozs.	Larry Branstetter	1973	Missouri River
Pallid sturgeon	60 lbs. 0 ozs.	Gene Sattler	1979	Yellowstone River
Pumpkinseed	0.95 lbs.	Tim Colver	1985	Milnor Lake
Pygmy whitefish	0.16 lbs.	Orlin Iverson	1982	Ashley Lake
Rainbow trout	21.45 lbs.	Jim Aklestad	1989	Private pond (northwest of Vaughn)
Rainbow-cutthroat hybrid	30 lbs. 4 ozs.	Pat Kelly	1982	Ashley Lake
Rock bass	0.57 lbs.	Don Holzheimer	1989	Tongue River Reservoir
Sauger*	**7.57 lbs.**	**James Jessen**	**1990**	**Yellowstone River**
Shorthead redhorse sucker	4.68 lbs.	Ray Quigley	1985	Marias River near Loma
Shortnose gar	3 lbs. 1 oz.	John Johnson	1977	Fort Peck dredge cuts
Shovelnose sturgeon	13.72 lbs.	Sidney L. Storm	1986	Missouri River
Smallmouth bass*	**6.09 lbs.**	**Terry L. Druyvestein**	**1990**	**Fort Peck Reservoir**
Smallmouth buffalo	10 lbs. 4 ozs.	Ron Skirvin	1989	Fort Peck dredge cuts
Stonecat	0.42 lbs.	Robert M. Garwood	1985	Milk River at Havre
Tiger muskellunge**	**7.70 lbs.**	**Richard Roberts**	**1990**	**H.C. Kuhr Reservoir**
Utah chub	1.43 lbs.	M. Steve Kovatch	1986	Canyon Ferry Reservoir
Walleye	14 lbs. 14 ozs.	Duane A. Leidholt	1989	Yellowstone River (near Miles City)
White bass	1 lb. 2 ozs.	Ludwig Dubbe	1986	Fort Peck dredge cuts
White crappie*	**2 lbs. 6 ozs.**	**Greg Johnston**	**1990**	**Tongue River Reservoir**
White sturgeon	96 lbs. 0 ozs.	Herb Stout	1968	Kootenai River
White sucker	5 lbs. 5⅓ ozs.	Fred Perry	1983	Nelson Reservoir
Yellow bullhead	0.72 lbs.	Wade Fredenberg	1987	Yellowstone River
Yellow perch	2.37 lbs.	Vernon Schmid	1988	Ashley Lake

***New Montana record for 1990** ****New to Montana's record list**

CONTRIBUTORS

• "The Call of the Trumpeter" is probably how the swan got its name. **Deborah Richie** characterizes the trumpeter swan's song as a "melodic, two-note horn," an "unmistakable 'koh-hoh' " sound. Another researcher says the trumpeter's call sounds like a "Hong Kong taxi." The call is only one distinctive characteristic that can help distinguish the trumpeter from tundra or mute swans. The trumpeter came close to vanishing from the lower 48 states—in 1933, only 66 trumpeter swans could be found in the entire United States. While studying swans during a two-day course at Red Rock Lakes National Wildlife Refuge, Richie and her fellow students counted an impressive 218 trumpeters. But the news is not all good because the number of swans wintering at Red Rocks is "climbing off the charts," and the haven is becoming overcrowded. Richie's article leads off this issue (page 2). She is the nongame information specialist for the department.

• The year was 1988 and controversy was swirling over new fishing regulations. The Fish and Game Commission directed the Montana Department of Fish, Wildlife & Parks to write fisheries management plans for the state's most important waters. Rock Creek in west central Montana was the first choice in this step toward "Planning for the Future." As **Dennis Workman's** article points out, management plans are more than pieces of paper. This one considers floaters vs. wading fishermen. It calls for monitoring of trout populations and angler use to protect against degradation of the wild fishery. The plan outlines specific steps to protect trout habitat. And, as Workman writes, "The...plan is a product of public discussion on how a highly valued, irreplaceable resource should be managed." He is the Region 2 (Missoula) fisheries manager; his article begins on page 8.

• The opportunity for "Rosebud Revisited" opens on page 15. Lots of folks know a battle was fought there in the late 1870s. But few people know that Rosebud Battlefield State Park marks the site of the largest Army-Indian battle ever fought on the northern plains. They may not recall that the Rosebud preceded Custer's more famous Little Bighorn battle by only a week. As **Doug Monger** points out, the area is rich with history—a buffalo jump, a vision quest site, and much more. Monger is the assistant administrator in the Parks Division's Helena office. He was previously parks manager in Region 7 (Miles City). He wishes to express his appreciation to Neil Mangum, historian and authority on the Rosebud Battle, for his review of this article.

• Governor Stan Stephens proclaimed him Montana's "roving ambassador." His travels may be the longest on record, even though he only traveled from Montana to Missouri. Newspapers carried stories about him, wire services chronicled his activities, and he even made it to national TV. But the really unusual thing about him is that he is an elk nicknamed Earl. And when he left Montana, he wasn't wearing a sign that said "Kansas City, Here I Come!" But he was wearing a radio collar and therein lies the key to the mystery. For an unusual adventure story with a happy ending, turn to **Gary Olson's** saga about Earl on page 19. Olson is a biologist with the department's Wildlife Division; he works in Conrad.

• As **Janet Ellis** writes, "You could mail two of them, first class, for 29 cents. A common house mouse weighs at least twice as much...." She's talking about bank swallows, and at about half an ounce, they rank as the smallest swallows in North America. They nest in burrows dug into the banks of lakes or streams. She notes that watching them work on their burrows and engage in other activities has helped her appreciate the diversity of Montana's wildlife; she suggests the same approach may work for you. Beginning on page 27, she is "Banking on Swallows" as this issue's "Watchable Wildlife" species. Ellis works for the Montana Audubon Council in Helena.

• Here's how the story ends: "But tonight there is a party on the river for a father and son, and we may even invite the wind to make a wish and blow out our candles." But start at the beginning—turn to page 30 and **Tom Palmer's** "Madison Midsummer." He has taken on quite a task. He weaves together: a father and son celebrating their mutual birthday in a magical place, an annual salmon fly hatch, some social posturing by some dandified fly-fishermen, his maiden voyage as captain of a well-patched raft, a taut line going slack with nothing at its business end. It's not your usual *MO* piece, but we think readers will find Palmer's article an enjoyable way to spend an hour. He continues as an information officer with the Conservation Education Division in Helena.

• *Montana Outdoors'* "Perspectives" series continues with a trek up "Spring Mountain" with **Craig Jourdonnais**. As you might suspect, the spring is not just any spring, the mountain is not just any mountain, and the trek is not just any trek. The spring signals the health of the mountain, and the annual visit to the spring signals the health of the visitor. As Jourdonnais writes, "Anyone who harvests the fruits of the outdoors gradually develops an intense appreciation for those isolated 'personal kingdoms' that allow one to breathe and place the rest of the world on hold." But what happens when your directions go awry? Turn to page 36 for an answer. Jourdonnais is a videographer for the department; he is one of three producers of "The Outdoor Report" which airs statewide Thursday evenings on The News Station (formerly Montana Television Network).

• *MO* thanks the following photographers and artists for their contributions to this issue: **Robert E. Barber**, Arvada, Colorado; **Larry Dech**, Grand Haven, Michigan; **Kristi DuBois** and **Conrad Rowe**, Great Falls; **Janet Ellis**, **Harry Engels**, and **Mike Logan**, Helena; **Michael** and **Patsy Fribley**, Big Timber; **Andy Gerrard**, Jackson County, Missouri, Parks and Recreation Department; **Dan** and **Cindy Hartman**, Silver Gate; **Mark Lagerstrom**, Darby; **Martha Lonner**, Bozeman; **Missouri Department of Conservation**; **Charles B. Place, III**, Lolo; **Bill Stratton**, Billings; **Judith Strom**, Whitehall; **Jim Toth**, Missoula; **Tom Ulrich**, West Glacier; and **Paul Updike**, Townsend. Thanks also to the following photographers who work for the department: **David Conklin**, Miles City; **Craig Jourdonnais** and **Doug Monger**, Helena; and **Gary Olson**, Conrad.■

BANKING ON SWALLOWS

by JANET ELLIS

I SIT WITH BINOCULARS and stare at a hole in the river bank. A shower of sand comes tumbling out. A few seconds later, another pile of sand slips to the ground.

After the dust settles, a small, brown head pops out of the hole. The bird pauses for a moment, looks both ways, then launches itself into the air. Within a few minutes, the swallow returns to the hole and continues its excavation.

"Bank swallows," my bird book tells me. They are distinguished from other swallows by their "brown back, white throat and stomach, and narrow brown breast band." But it's tricky to spot these characteristics as they dart by; they need to be almost motionless for me to get a clear look at them. Experience tells me that one of the few times bank swallows remain relatively still is when they work on their burrows. I scan the cliff with my binoculars and spot about 40 birds working diligently.

I enjoy watching birds. It's fun—but it's also a sport that requires skill, discipline, and patience. I particularly enjoy watching birds as they eat, drink, defend their territory, go through courtship, and socialize. Watching birds, like watching all wildlife, has helped me appreciate the diversity of wildlife in Montana and elsewhere. As I watch bank swallows, I am continually amazed.

If you really want to learn to identify

TOM ULRICH

bank swallows, find a colony along a river, sit down for a while, and listen. The easiest way to identify these birds is to learn their call. It is described in bird books as a rather weak "chatter, twitter, or rattle." That's not a particularly helpful description, but the call is easily learned if you just listen for a bit.

WHILE YOU SIT along the river listening to the swallows, you can begin to learn about one of nature's marvelous creatures. Some background may help, so we'll begin with basics: name, rank, and serial number. Both the common and scientific names (*Riparia riparia*) of the bank swallow refer to the best known characteristic of this delicate bird: It nests in burrows dug into the banks of lakes or streams. The "riparia" comes from "riparian," which means streamside. Because they have such specific burrowing requirements, bank swallows are restricted to places with steep, sandy cliff faces. Colonies are also found in gravel pits and road cuts.

Bank swallows rank as the smallest swallows in North America, weighing approximately one-half ounce. Try to put "one-half ounce" in perspective: You could mail two of them, first class, for 29 cents. A common house mouse weighs at least twice as much as a bank swallow; most of us would like to lose at least two pounds—or the equivalent of 64 of these birds. Needless to say, they are tiny.

The closest thing to a serial number a swallow may ever have is a band placed on its leg by a biologist. These bands help biologists discover all sorts of things about a bird, including how long it lives and where it migrates. If they survive the first year, bank swallows generally live to be about 4 years old, although researchers recorded one swallow that lived for eight years. We know they spend their summers as far north as Alaska and their winters as far south as Argentina.

Putting all this information together, I begin to appreciate the swallows in front of me. In their lifetime, these tiny birds will probably visit Montana and South America four times. When they arrive in Montana in mid-May, many will actually return to build their burrow on the same cliff by the same stream as they did the previous year.

I scan the cliff again. By pecking with their tiny bills, kicking their feet, and shuffling their wings, they scrape their way into the cliff face. Both sexes excavate. In easily dug banks, a pair can dig four or more inches per day. They continue digging until the burrow is two to four feet deep. The finished tunnel has an arched ceiling and a flat floor. Excavation is interrupted by frequent flights.

Flying is one of the things swallows do best. In swift, darting flight, they hold their wide-gaping mouths open, scooping hundreds of insects out of the air: flying ants and termites, treehoppers, leafhoppers, aphids, beetles, mosquitoes, houseflies, crane flies, moths, etc. I marvel at the variety in their diet. Bank swallows have been clocked at 30 miles per hour. Imagine inhaling a bug down your throat at 30 mph? Watching them gives me new appreciation for how some creatures make a living.

BANK SWALLOWS FIRST caught my eye when I was a college student in Missoula and I set out to determine the swallow's incubation temperature. The burrow is a unique place for a small bird to nest in because it is always cooler than incubation temperatures. By looking at the swallow's incubation temperature, I hoped to better understand their "strategy" of survival and to help biologists understand how this bird makes its way in the world. On the way to finding this information, I became well acquainted with several pairs of swallows.

Most of us are never invited into a bird's home. Although I wasn't exactly

TOM ULRICH

The smallest of North America's swallows, the bank swallow weighs only one-half ounce. It nests in burrows dug into the banks of lakes and streams (opposite page), preferably in places with steep, sandy cliff faces.

invited, I was fortunate enough to be able to watch several nests from inside the bank. I excavated an observation pit behind a swallow colony. After putting a roof over the pit, I tunneled up to the unsuspecting swallows. I inserted a thermistor probe into a silicone-filled bank swallow egg and placed one of these temperature-measuring eggs in each nest. I then placed a small window against the nesting chamber so I could watch.

During the research, I learned that for the bird world, bank swallows have a normal incubation temperature (93°F). I also learned that individual pairs behave differently. Two of the pairs I observed seemed to behave the way other researchers had noted. They built their nest, of loosely woven plant stems and feathers, at the end of the excavated burrow. The female laid four eggs. Both parents took turns incubating, with one replacing the other on the nest.

And then there was the third nest. While the other pairs remained almost silent in the burrow, this pair chattered incessantly. Instead of taking turns incubating the eggs, these chatty birds went everywhere together, leaving the eggs unattended. They also collected feathers—lots of them. In fact, their nest was filled with them. They must have found a barnyard because most of the feathers came from chickens. After incubating their eggs for 14 days, they abandoned the nest; the eggs turned out to be infertile.

In Montana, bank swallows raise only one brood per year. Two of the nests I watched hatched young. Both parents fed and brooded the young birds (kept them warm). More than once, I had to rescue a young bird wedged behind my viewing window. They didn't seem afraid and took my rescue operation in stride—they just stared at me as I moved them out of the hole to safety.

Young bank swallows have incredible faces. Their yellow beaks look oversized and stretch into an exaggerated expression. I think it's their speed and this exaggerated expression that make them so adept at catching bugs.

JANET ELLIS

MY MOST EXCITING observation came 14 days after one of the birds had hatched. My research project had ended, but I continued to visit the swallow nest periodically to see how things were going. On July 19, I wrote in my journal: "Twerp [a nickname I had given one bird] spent time exercising his wings today. He would sit at the edge of the entrance to the burrow for long periods of time, looking out. Then he would come into the burrow and have these little spasms and wiggle around and flap his wings. He preened himself a lot too. Then he'd go and stare out of the burrow entrance again. He'll surely leave this nest soon." Bank swallows usually fledge when they are from 18 to 22 days old.

The next time I visited the burrow, Twerp was gone. He would undoubtedly master the ability to collect insects on the wing—and then head to South America for the winter. If he survived the winter, he might return to this cliff face next year to try his hand at selecting a mate and building a burrow. I wondered if he would be a chatty bird collecting lots of feathers, or a quieter type who stuck to his bird business?

In "Keith County Journal," John Janovy wrote, "There are times when a person goes after a species with the idea that maybe, just maybe, there will be something in the life of that creature that will add perspective to the life of the person." Bank swallows have added a perspective to my life. They began as birds with a "brown back, white throat and stomach, and narrow brown breast band." Through reading and observation, they became one of Montana's marvelous wildlife species.

Spring is an excellent time to take advantage of the wildlife around us. Sit, watch...and see what you can learn. ■

madison midsummer

by tom palmer

chapter I

I'M TRYING TO LISTEN, trying to break down the Madison River and its valley like a diagrammed sentence. But I was born in an industrial city; there is rust in my DNA. Sometimes, the best I can do is come away with the notion that I need more time.

If you can allow yourself to set apart for the moment what Mark Twain and the Army Corps of Engineers have done for the Mississippi River, the Madison may well be the most mythologized river in North America. Each year more than 100,000 anglers are drawn to the Madison, and they come to fish for wild trout.

So much of the Madison River ballyhoo, however, is as much about a mammoth bug as it is about wild rainbow and brown trout. And each year the ephemeral emergence of *Pteronarcys californica*, the giant stonefly anglers know as "salmon fly," temporarily whips birds, trout, and anglers into a reckless frenzy.

Big trout, that reach a beefy mass through a baronial sense of habitat ownership, seldom rise to a dry fly. But they temporarily lose their senses when thousands of clumsy, gossamer-winged salmon flies forsake their nuptial bushes to lumber over the water. After their tryst, male salmon flies sputter off aimlessly, and the females, on a mission to complete the species' life cycle, fly, bounce, and squirm over the water surface to deposit their eggs. And there, amidst an onslaught of suddenly voracious birds and trout, the world can go a little crazy.

The Madison River's salmon fly hatch generally recurs from the second week in June through the last week in July. The first emergence occurs near Three Forks—where the Madison, Jefferson, and Gallatin rivers meet to form the Missouri River. Quake Lake, more than 85 river miles upstream from Three Forks—formed by river-damming rubble and boulders calved off the flank of the Madison Range during the infamous 1959 earthquake—marks the end of the hatch pursuit for most anglers.

The hatch progresses south and upstream, miles from roads and through dark canyons, as the river gradually warms. But catching it at the right time, at the right place, and with the right fly is a matter far beyond the calculating trigonometry of lunar tables. But nonetheless, we tried.

SEPARATED BY MORE THAN THREE DECADES, my son and I share the same midsummer birthday. For Ryan's fourth birthday, my wife, Teri, suggested a trek south to the Madison River, ostensibly to camp along moving water, grill hot dogs, float the river, and celebrate our family's cosmic good luck. I also knew it was the middle of the Madison River's famed salmon fly season, and that with any luck at all I could expect the hatch to be in the vicinity of Ennis, a town established in 1863 when a log cabin was built by a gentleman who freighted supplies to the bustling gold mining boom towns.

Across most of the country it was midsummer, but in Montana it was still late spring, the time of year one could find at least a few salmon flies still clinging to river bank willows. The bugs would have been conceived about four years earlier, an unusually long time for a stonefly to spend in the river. But the salmon fly (which gets its name from its distinctive pinkish hue, not from any *bon vivant* association with the salmonid family) spends almost its entire first year in the river as a dormant embryo, a speck stuck to submerged rocks and debris. Over the following three years, the six-legged, skin-shedding, algae-eating, rock-climbing nymph grows and

Madison River photo by Larry Dech.

CHARLES B. PLACE, III

For a few weeks each summer, Pteronarcys californica, *the giant stonefly known as the salmon fly, whips birds, trout, and anglers into a reckless frenzy.*

grows to leviathan proportions. Its crawl to land is finally triggered when the water temperature warms to above 60 degrees, and when it emerges from its nymphal shell it's about the size of a sausage link with a four-inch wingspan.

During our float down river, at an unusually quiet and windless interlude, a lone salmon fly fluttered from the bushes and struggled to lift itself high over the water. Its appearance gave me pause because the hatch had passed through that stretch of river days before. But while watching the fly, I had renewed hope that a few sporadic late emergers might yet allow me to throw an imitation to a trout's liking. Then, out of the blue, a heat-seeking Western kingbird busted the fly in midair, missed the meal, but knocked the bug so silly it tumbled from the sky. The moment it hit the water a brown trout took the fly in a flash of crystalline precision. The bird flew off and the calm air seemed to clang. As we looked at each other as if to say, "Did you just see what I saw?" there was an astonishing sense of having just floated through a span of unaccountable strobe light clarity where the fable of "The Bug, the Bird, and the Fish" was instantly revealed.

The Yellowstone, Jefferson, Big Hole, Rock Creek, Blackfoot, and several other Montana rivers also produce the cumbersome salmon fly, but none has acquired the singular notoriety of the Madison. David Quammen, in one of his flawless essays, stops to extol the wonder of the Madison's geothermal source in Yellowstone National Park and the cooling, nurturing qualities of its downstream tributaries. But, he laments, "Thanks to these graces, it is probably much too famous for its own good, and here I am making it a little more famous still."

And here we go again. Yet, thanks to the dignity of the people who inhabit the Madison River Valley, we have somehow been spared anything as embarrassing as an officially sanctioned salmon fly festival, fraught with chili cook-offs, dueling tubas, and bewinged Salmon Fly Queens. Really, there is no need to attract more people to the Madison from late June through mid-July—when the river endures more than 80% of its annual fishing pressure—because the reputation of the river's salmon fly is already firmly established in angling lore.

chapter II

BY THE EARLY 1980s, the Madison and its hatch had reached a peculiar social status. People, dressed to the nines in neoprene jumpsuits and billowing angling ensembles that breathe, began an annual convergence on the middle river. For a few weeks each summer, the new breed of angling tourists manage to turn tiny, funky Ennis into a summertime Telluride, a place where being seen by similarly minded throngs is somehow better than actually being in what is supposed to be a secluded hideaway. Still, I'm reminded by Edward Hoagland that even "Thoreau had no interest in the pathology of solitude." So there you have it. I have a friend, an accomplished and dedicated angler, who has acrimoniously renamed the Madison the Wall Street River. I know others who refuse to fish the Madison during the salmon fly hatch because the river and the experiences they remember have been lost to them.

I like to think I can understand their sense of loss, and wonder how much of a person's life is shaped by early experiences and yearnings, by a psychological imprinting that creates synaptic brush fires that continue to flare for a lifetime. But what happens when those yearnings are finally in ashes? I'm nearly 40 years old and each summer I still watch accomplished anglers with envious admiration. Even as my own fly-fishing skills improve, I'm vexed by statistics showing that more than 70% of the anglers on the Madison River come from points outside Montana. I see myself someday sitting on a wobbling dock with my cane pole, bobbing ingenuously with each lap of water that reaches and recedes from the shore. I can't help but wonder if many among these new sports are capable of reading the river, recognizing a hatch, presenting a fly, or if they know that such watercraft arcanum is part of the

fly-fishing bargain. Perhaps I'm somehow missing the point, or worse—I recognize that these are Gatsby's polo people, 70 years removed. People who can "drift here and there unrestfully" and "be rich together." People with the time and the money to keep me on the dock forever.

WE CAMPED AT THE JUNCTION of the Madison River and one of its many cooling tributaries in a public campground south of Ennis and north of West Yellowstone. A quick reconnaissance of the streamside brush turned up several salmon flies drying their delicate wings in the safety of the willows and hundreds of shucked shells glued to the cobbles. The empty shells offered evidence of the insects' transubstantiation and the few salmon flies still clinging to the willows provided a sure sign that the head of the hatch, where the learned angler usually wants to be, had already progressed upstream.

Some 40 years ago, just north of our camp, archaeologists found a quarry likely mined by Shoshone Indians for the dark, soft lava stone used to fashion their distinctive vessels and containers. Tipi rings were found nearby, and, to the east, farther up the creek, lies an aboriginal battleground.

Not far from where this salmon fly wave begins rolling is the Madison River Buffalo Jump, a pishkun in a deeply serrated limestone bluff where for 3,000 or more years native people organized great communal drives of bison over a cliff and onto the rocky alluvium in a violent rumble of moans and howling carnage that is frightening even now to imagine.

On the high flats, Indians also built eagle-catching pits on top of fossilized fish remains that date back millions of years. On a higher point, overlooking the river valley, a large man is prominently outlined in smooth, rounded boulders. It is one of only a handful of such figures in Montana and Alberta, and it is thought to be an ancient symbol honoring Napi, the Blackfeet Indians' "Old Man," the ribald god of creation. The Blackfeet, once widely feared and who virtually ruled the northern plains for centuries, must have been an extraordinary presence in their time, for only an extraordinary people could have a creator who deliberated creation with his wife, and was so irrepressibly playful that he enjoyed telling an occasional dirty joke. The point being: The Madison River, with its beautifully undercut banks, long riffle sluices, deep pools and difficult pocket water, recurring salmon fly emergences, insects, otters, beaver, deer, elk, moose, earthquake faults, geologic uplifts, mountain ranges, and, yes, grazing cattle is more than a near-perfect fishery. It is a sacred place, a place that draws us away from our homes, whether we know it or not, so we can dream the songs and imagine the winds of an earlier time.

chapter III

WE STRUGGLED TO FASHION a huge plastic tarp into an effective windbreak, using all the river stones we could carry, and watched as our provisions were blown throughout the camp. Small boxes and cups tumbled away but were eventually caught in the stiff grasses and brush. Meanwhile, things like napkins and newspaper caught the wind like so many soaring raptors. The dry fly-fishing would be murder, I thought, and soon lost track of the front page's buoyant flight toward the jagged and snowcapped northern horizon.

Gary LaFontaine, a fly-fishing expert you can trust but one sometimes accused of giving away too many secrets, estimates that only one year of every four produces a "great" salmon fly hatch. "Too much can happen to spoil the party," he wrote in his latest book, "The Dry Fly." "The weather might be too hot or too cold; a strong wind might blow (it can make fishing impossible even if the insects and trout are willing); or the insect populations themselves might be poor during any given year." Clearly, I thought my problem would be the wind, but then our campground neighbor rolled in.

HE ARRIVED IN A VAN, an old one, with small tires and a drive-through paint job. Two chubby youngsters jumped out of the rear cargo doors and four folded nylon-webbed lawn chairs, flung like Frisbees from inside the van, harried them to the picnic table. When the man's wife opened the passenger door and emerged from the front seat with a bag of tortilla chips, the full effect of Ferlin Husky's "If You Ain't Lovin', You Ain't Livin' " reached

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During "the hatch," main street Ennis bustles with a new breed of anglers.

CRAIG JOURDONNAIS

PAUL UPDIKE

our camp in throbbing waves of existential trepidation. Teri looked somewhat aghast and I swear our boy looked up from the batch of vacated nymph shells he'd gathered and said, "Ah-oh."

As we fought the wind and made slow progress toward establishment of a secure camp, I noticed our neighbor making the campground rounds, stopping where he spotted oars, fly rods, and rod cases propped in the lee of tents and campers. He was tall and thick-set and walked as languorously as any big man gone to fat. He wore the favored neoprene jumpsuit, a fishing vest but no shirt, and a bent straw cowboy hat rolled redneck fashion into something shaped like an armadillo. A bazaar of angling and surgical gadgets dangled from retractable strings attached to his fishing vest.

When he approached our camp, I walked out to the pickup to greet him. We shook hands and began to talk about the fishing. We discussed luck, the crowds, the never-ending parade of rafts and dories, imitations that would work and which ones might be absolutely hopeless. He complained bitterly about infidels across camp jumping from rock to boulder, dragging "hardware" through the holes. He looked hard into my face for recognition and it crossed my mind that this guy was a character waiting for Sam Shepard to come along to write him into a play. When he concluded by saying it would be hours, if not days, before those holes would be fishable again, I finally got it. He had a thirst for beer.

We drank a beer while he pulled vials of insects from his vest and offered me an Evelyn Wood course in the fly-fisher's streamside entomology. After his second beer he admitted that he didn't much like the Madison and would rather be on the Big Hole. He estimated that the head of the salmon fly hatch was several miles upstream and showed me on a river map exactly where he would fish if he were me. With that advice he delicately removed a plastic fly box from his vest and presented to me a riot of big, colorful, and exquisitely tied stonefly drys. I reciprocated by showing him the 75-cent flies I'd purchased at a national discount chain's sporting goods department. He demurely rejected their merit in a way only really big men can get away with, and, feeling generous and superior, he gave me several of his admirable flies.

I watched the guy replay his act several times for most any camper who would pay him more than just the time of day and I watched him offer a genteel tip of his odd hat to those who too quickly gave him the brush. I was busy sorting our gear for the next day's float, and had all but lost the visual details of his visit, when I heard severe protests roll over the willows. From the distance I saw him standing, arms akimbo, complaining to his family about order and obedience. He sat down stiffly in the webbed chair and his barefooted children slowly backed away from the sad smoke of the campfire and padded down to the river. I don't think he ever walked to the water's edge. Come morning they were gone.

THE TRUTH MUST NOW BE TOLD. This was my maiden voyage down the Madison River as raft captain, so I had no intention of trying to hit the head of the hatch and tangling with guides and outfitters who place a sanctified value on boat handling. To avoid the crowds, insults, and fisticuffs I intended to begin our float at the camp and travel downstream, well behind the head of the hatch and away from all the frantic salmon fly seekers.

The raft that would carry us toward Ennis was borrowed, an item garnered by a friend in a divorce settlement. It showed signs of wear and tension. One skid plate was missing and the other was barely attached. I spread shoe goo over the bottom of the tube, pressed the remaining skid plate in place, and hoped for the best. But turning the bottom of the raft to the sky proved a mistake. Two dapper anglers wheeled up to the boat ramp with their guide and began mumbling about the raft's river worthiness.

"Great," I silently moaned. "Experts."

Immediately I became aware of the raft's quilt of patches and turned defensive. I told them the craft had been down a remote and demanding river 40, maybe 50, times and they knowingly nodded their approval. I went back to work.

They said they'd spent the past two days fishing the Yellowstone.

"I usually fish the Missouri," I said without stopping to look up.

"We hear good things about morning trikes, afternoon hoppers, and evening cads up that way."

"Evening cads? Did you say 'cads'?"

"Yeah. Cads. Caddisflies."

"Not so good anymore," I lied. "They're draining the river to float casinos down the Mississippi. That's why I'm down here."

They broke out gleaming black rods from lovely red cases and mumbled something about a crock-o-cheese and I had had enough. "With you guys taking a break from insider trading, I understand the Big Board's in a tailspin," I said, managing a wry smile.

One man frowned and the other flashed me an ancient and obscene hand signal. I took no offense, but their guide shook his head in disbelief and I sensed my behavior had been vindicated by the pro.

Waiting for shoe goo to dry is uninspiring, but the sun was warm and it offered us time to sit on the bank and watch

fishing boats pass by. One by one the endless and colorful armada floated by our willow-framed window and down to the nearby ramp where they would unload their gear and decide if "the hatch" was everything it has been cracked up to be. The fly-fishers continued to bang away at the bank with an assortment of flies and exotic casting techniques that seemed based on the axiom that the water is no place for a dry fly to rest. At one point in his writing, Thoreau waxed on about fish more colorful than flowers, and sitting there on the bank, I teased Teri and Ryan about being at a unique point in our history. The anglers entertaining us were surely more colorful than either the flowers or the fish. "Get the hook," Teri said.

I rowed the entire day. Not a difficult thing for me to do now, but then I was an awkward novice so lame on the oars I acquired a nickname that captured my tendency to send the boat into balletic whirls down river. It was torture. At day's end, having rowed back against the high and swift current, dodging boulders as if they were land mines, I was exhausted and my hands were badly blistered. Late in the afternoon we floated past a sport standing in a boat being restrained by a guide standing in the stream, a human anchor. The man flailed away at the water, casting badly time after time, but the guide kept the boat motionless, hoping his client would somehow present the fly and catch what must have been all but a sure thing. Annie Dillard wrote in a "Pilgrim at Tinker Creek" that, "Living is moving; time is a live creek bearing changing lights." If time is like a creek, or a river, then maybe the guide provided the restraint for good reason and it only looked unbefitting to my cynical eye. No, if time is like a river, I can't blame that angler for allowing the guide to give him more time by jumping into it and mooring him to space. With my hands so sore and my arms so tired, what would I have given to hire that guide to hold my boat, to stop this moving, to stop this time? But I would surely have put down my rod and opened my arms to hold my young son forever and touch my wife's youthful face with untrembling fingers and that would be enough for me. Get back in this boat, good fellow, let us all go down river together, living and moving and feeling the warmth of the changing lights. There will still be time to fish.

AT LEAST I HOPE SO. FW&P's Dick Vincent is convinced the river and the fishery will endure. "You know, I don't see anything that should change the fishery," he told me. Vincent grew up along the Madison and has spent much of his career as fishery biologist studying the river. When he talks about the Madison, there is the sense he's talking about *his* river. "The changes I see are aesthetic, things like crowds, subdivisions, and housing developments, but basic water quality and water flows should remain the same for long into the future, and I wish I could say that for some other streams."

Sometimes it seems as if I can recall every fish I ever caught. Mark Twain was convinced that his river-piloting experience provided him with a deep and lasting memory in no small way responsible for his powers of recall. Perhaps memory has something to do with water—moving, rushing, powerful water. There's the perch I caught on a cane pole back in Pennsylvania and later the big carp I frantically hauled up from the dock and across the wet grass to my uncle's summer cottage. Now, with fly-fishing and trout, the details are many. I remember the exact places where I have hooked trout, how well or poorly I retrieved the catch, the fly used, the style and proficiency of the cast, how the trout looked in the water just before I landed it, or in the instant before it broke free of the hook or yanked the tippet from a poorly tied knot. Was it dumb luck, or was it real understanding? I remember the time of day, the season, the disposition of the sun, the mood of the wind.

And now I remember that day on the Madison, a birthday celebration, and I can almost relive the experience. I'm there, tying on the huge sofa pillow the Ferlin Husky fan traded me for beer and conversation. I feel the ache in my arms and I'm surprised at the ease and rhythm of my cast and the power of the rod. I'm remembering the famous guide who taught me how to cast a fly until my arm went numb and feeling a little stupid now for not knowing I was supposed to tip him after he poled me through the Florida Key's backcountry on a hunt for bonefish. What a dope. There. Now, that's a nice cast and, yes, there are times when I wish I'd never read "Ninety-two in the Shade." Look at that. *Nice* cast. The big salmon fly rides so beautifully high on the dark water. It's impossibly high and more beautiful than a natural and I drift with it, on it, over it, and it enters a door to hyper-reality and it drifts even more beautifully and it drifts with the water and I mend the line and it drifts more beautifully than ever and the water slows and thickens to a consistency of sweet crude and it drifts, come on, it drifts, naturally, look at it, it's there, it's there, come on, take it, it drifts, drifts. Bang!

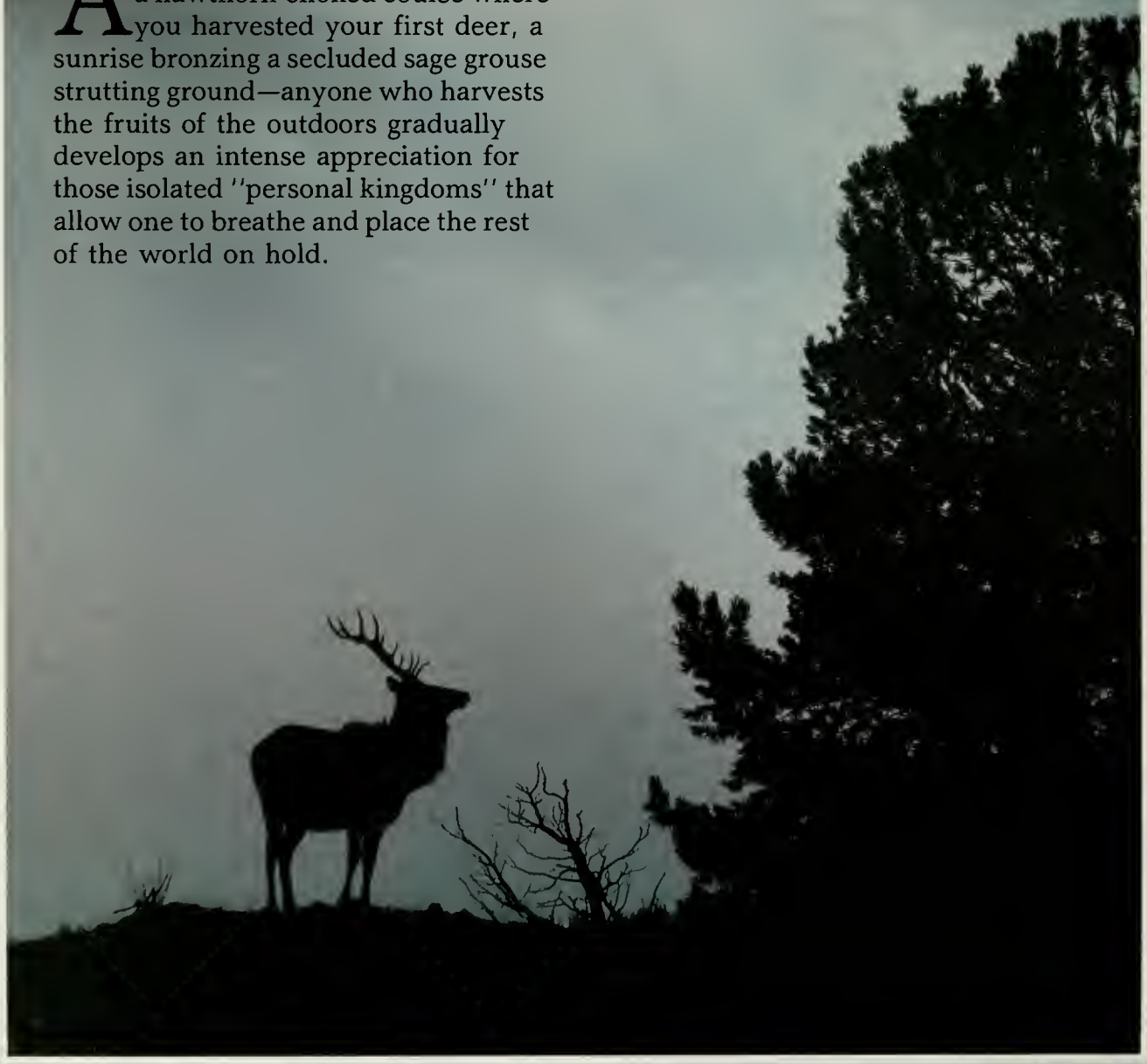
I lift the rod, pull the line, and feel the tug, the power, the flight, and I lose a breath and let the slack run taut, dip the rod, and nothing. Gone. I grit my teeth, curse, look at my reel and out to the water and its darkly radiant sheen. Shadows cast on the green hills race by. The river swiftly passes. They seem pulled by the same invisible force connected to perpendicular wheels turning in opposite directions. I reach down and cup a palm full of water to splash on my face and down the back of my neck. The world turns so much slower up here. The sun is very high and near the end of its westward arc casting an unusual winterlike pink blush to the far distant clouds. An osprey breaks out of the water some 20 yards in front of me. I hadn't seen it dive into the river and wonder if it had grabbed a fish too large to lift and was pulled under for a short, frantic ride before wriggling its talons free.

I see Ryan upstream and imagine him calling for me. Teri waves and I can just see her smile. What a lovely place this is. Waves of late afternoon heat reel up like celluloid. In the distance, beyond the amber film, my family waves, and I fully expect to see "The End" and credits roll up. I wave. They wave. I look back to where the trout took my fly, and I'm stunned by the din and rush of the river's flow. I tell myself that next time it will be better. I'll be smart and deliberate. I will connect. But tonight there is a party on the river for a father and son, and we may even invite the wind to make a wish and blow out our candles.■

SPRING MOUNTAIN

by CRAIG JOURDONNAIS

A PASSIVE BEND of pristine river, a hawthorn-choked coulee where you harvested your first deer, a sunrise bronzing a secluded sage grouse strutting ground—anyone who harvests the fruits of the outdoors gradually develops an intense appreciation for those isolated "personal kingdoms" that allow one to breathe and place the rest of the world on hold.



PERSPECTIVES

WHEN WE RECREATE, we all value some things in common. But it is our personal and unique perceptions that serve as the foundation for identifying these tranquil, mystical kingdoms. The spirit flowing from these places probably led our grandparents to initiate legislation for national parks, wilderness, and wildlife management areas. The value of these smaller personal kingdoms is significant enough that we often attempt to mentally stockpile the memories and locations, fearing that if one is lost or forgotten we may also lose some of our identity and worth.

When I was younger, my ability to accumulate these treasures seemed infinite. A recent struggle with reality suggested otherwise.

My family has owned a cabin on a small lake in western Montana for 21 years. The lake that carried my young echoes toward the mountain now carries my children's. One of my youthful discoveries was a spring that originated on the mountain near our cabin. The spring's remote location provided the excuse and confidence for me to label it a personal kingdom. High on the mountain, a stand of Douglas-fir engulfed a crown of vigorous willows that obscured any detailed view of the spring's source. Water flowed delicately through the willows and slid into a rough fescue meadow where it melted back into the dark humus. All this was held aloft by a slope resembling a castle wall in steepness and purpose. A montage of ponderosa pine, ceanothus, and pinegrass reflected the slope's dry, south-facing aspect. When I examined the mountain from a distance, I seldom found the spring's influence. As grand as the spring was in its immediate environment, distance allowed the mountain to swallow it.

During a hike to the spring several years ago, I discovered a set of massive elk antlers along an edge of fescue meadow, where meadow met willows. The shed antlers lay within a few feet of each other, each boasting six dark brown tines that curved toward the heavens. Once shed, the spirit and elegance radiated by the bull's antlers seemed transferred to the earth that cradled them. The browsed willow shoots, tracks near the spring, and grazed fescue suggested that the spring had nurtured this bull during winter's lingering months. Mature bulls normally shed their antlers during late winter—physically a critical time for elk. Shed antlers gracing the spring—a place that nourished and protected the bull during difficult times—seemed honorable.

The antlers' symmetry and mass presented a powerful image. I felt the rough, heavy beams and the smooth, polished tines. Questions about where this bull traveled during the past several months were partially answered by the array of natural scents that drifted from the dark brown beams. These scents created vivid images of alpine basins, lodgepole thickets, and the complex pattern of elk winter range. I didn't know what trails led this bull from his fall ranges; judging from his maturity, neither did many hunters. Regardless of this bull's other secrets, I knew this spring was a favorite haunt.

Last spring I decided to hike the obscure trail back to the spring. A few years had elapsed since my last visit and I wondered if the bull had returned and if I could retrace my old tracks. The start of my hike was automatic—ascend the steep south-facing slope through the ceanothus and ponderosa pine. As I reached the crest of the slope, I depended more on feel than specific landmarks. The smell of Douglas-fir, pinegrass, and elk sedge strengthened my confidence in reaching the spring.

After searching for over an hour, I returned to the crest of the steep slope, unsuccessful. It had been several years since my last visit, and my previous visits had been annual. I felt awkward and embarrassed about being unable to find something so important to me. A few days earlier, I had described this spring to my kids and promised to lead them to it when their hiking abilities matched the steepness of the south slope.

I had hunted deer and elk on this mountain for many years and realized the spring was not the only unique site around. But because of its therapeutic nature, this spring had become an indicator, the pulse of the mountain: As long as the water flowed each year and there were new shoots on the willows and new tillers on the rough fescue, then nothing could be terribly out of place. The spring also measured my pulse: If I could continue to find the spring and experience the wildness it gave freely, then nothing could be terribly awry with me either.

Failing to find it promoted some deep and perplexing considerations. I thought about the things in my life that infringed on my ability to preserve a vivid and pure memory of this wild place. By charging toward the frustrating and often empty rewards of the everyday world, I was failing to fully acknowledge what the spring had to offer.

I sunk deeper into my tattered wool sweater as cool, poetic breezes soothed these heavy cogitations. My descent lacked the drift and complacent feeling of past treks home from the spring.

A few yards over the crest of the slope, I stumbled onto an elk carcass. Judging from its condition, it was a recent loss. There was no visible indication of struggle. As I bent down to expose the lower jaw, I noticed the skull had antler pedicels. This bull had shed his antlers before dying—an unusual occurrence. Worn and stained molars on the lower jaw suggested old age as a probable cause of death. I marveled at this bull surviving over 15 years in an area where elk are heavily hunted.

Discovering this old warrior on the same day I had lost my direction to the spring seemed more than just coincidence. Perhaps his last set of antlers lay next to the spring's gurgling waters. If that were true, I have known this bull for most of his 15 years, but in those years, I had seen only his shed antlers and his tracks around the spring.

This bull's rack no longer brushed dew off the beargrass, dragged through duff in a lodgepole thicket, or followed familiar trails toward winter range.

I carry my memories of those youthful hikes to the spring—the fragrances, color, and complexity of the mountain environment. Perhaps my tracks won't bend grasses in the fescue meadow, press into the dark edges of spring water, or follow game trails through the dense willows. Life changes, and the transitions are sometimes traumatic.

I cherished those vibrant spring hikes, each trek a journey of its own. The images and treasures I carried off that mountain are eternal. The hiking, fishing, hunting, and huckleberry picking that fascinated me as a young charge now absorb my children.

My children, filled with wonder and curiosity, should discover the spring just as I did. They need to find it in their own way and in their own time. Perhaps the old bull's antlers are waiting for them where the fescue meadow meets the willows. Next to them are the shed antlers of a younger bull attracted by the spring's offerings. Suddenly, life's transitions seem less traumatic.■